Edition 2008

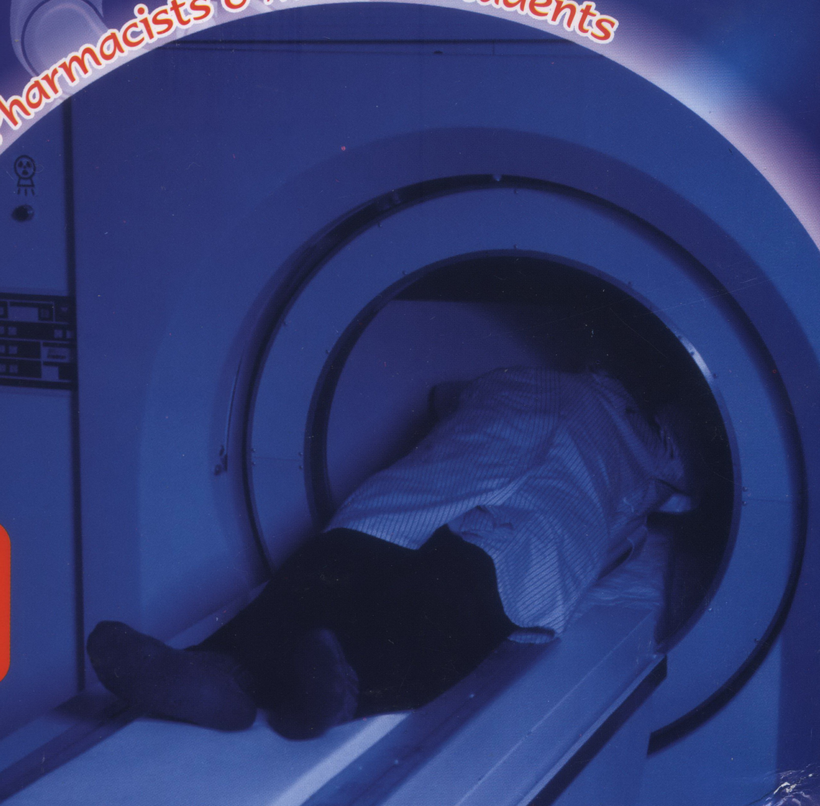
ATLAS-9

The Disease encyclopedia

Disease symptoms, diagnosis & treatment

Comprehensive reference enrich you with a broad spectrum background about the diseases

For Physicians, Pharmacists & Medical Students



Prepared By :

Dr . Henein Willi

Dr . Masry Khalifa

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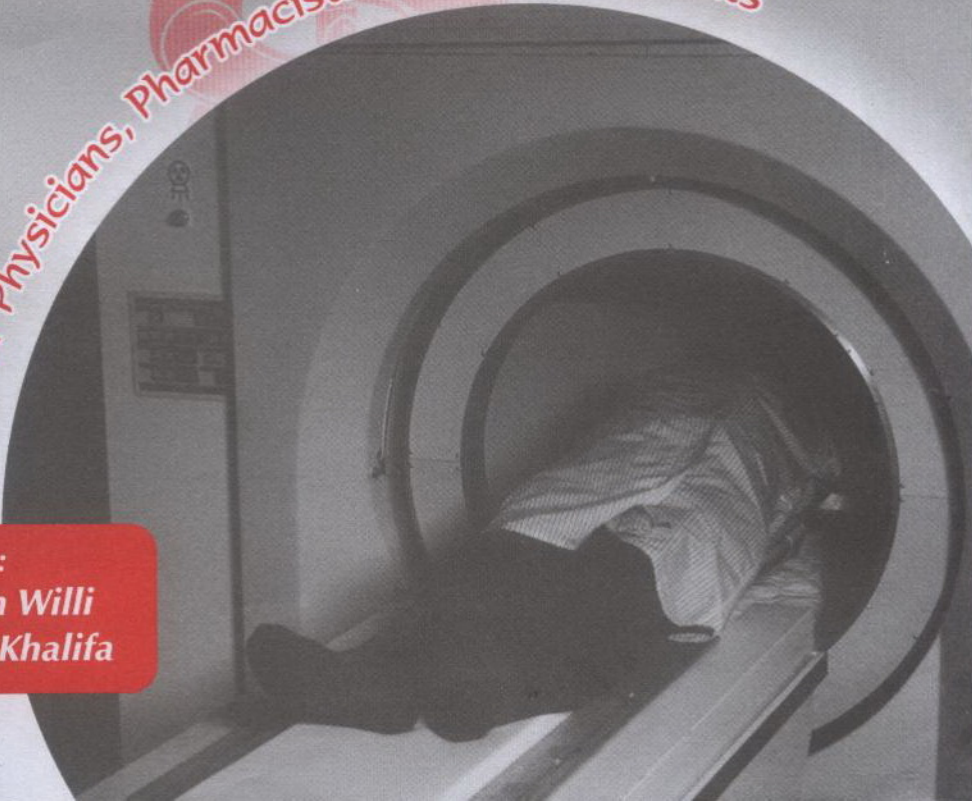
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نشـــكر ونمجد الله القدير الذى أعاننا على هذا العمل الكبير

ونشكر أيضا السادة الأطباء على مجهودهم ومعلوماتهم التى أثروا بها هذا الكتاب فخرج بهذا الشكل الرائع ونخص بالشكر السادة الأطباء

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إسـم الكتـاب : أطلـس ٩

المؤلـف : د/ حنين ولى حنين - د/ مصرى خليفـة

تصميم وفصل ألوان : Pateer CENTER ٠١٢٤٤٦٥٨٤٨ - ٠١٢٥٤٧٥٣٨٢

طباعـة : دار نوبار للطباعـة

الطبعـة الأولـى : ٢٠٠٨

رقـم الإيـداع : ١٠٠٦١ / ٢٠٠٧

يطلب من جميع مكتبات كليات الطب والصيدلة
بالقصر العينى وجميع المحافظات

للكميات والإستعلام: ٠٢-٣٨٧٤٦٣٥ / ٠١٠-٢٠٠٠٥٣٩ / ٠١٢-٦٢٥٥٠١١

للتوصيل السريع : مجدى ٥٥٠٩١١٩ / ٠١٢ وجدى ٥٧٥٣٣٠٣ / ٠١٢ عادل ٧٨٨١٢٣١ / ٠١٠

Chapter Index for Atlas-9

Chapetr 1 : Pediaterics..11

Chapter-2 Infectious diseases...29

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapter Index for Atlas-9

Chapetr 1 : Pediaterics

Caring of normal new bron baby

For cleaning umbilicus :

R / Alcohol 70 %

تنظيف للسرة مرتين يوميا حتى ينفصل الحبل السرى
ثم يستمر التنظيف حتى ٣ أيام أخرى

Then Local antibiotic to prevent umbilicus bacterial infection & help rapid healing of the umbilicus :

R / Baneocin powder .

بودرة للسرة بعد الكحول مرتين يوميا

Natural barrier to prevent infection & napkin rash :

R / Johnson baby oil .

دهان بعد التبرز

Antibiotic eye drops to guard against bacterial eye infection :

R / Isopto-fenicol eye drops .

قطرة للعين ٣ مرات يوميا لمدة يومين

Notes & Comments :

- Natural breast feeding start directly after delivery , glucose 5 % can be given for one day tells the mother is ready for lactation .
- Lactomax Caps. & lactoflow sachets contain (Fenugreek caraway + Fennel) natural products to stimulate lactation .
- Normal growth of the baby is 200gm ./week starting from the second week of labour .
- General medical check-up should be done e.g test for baby natural vitality & checking for jaundice , fever & mouth monilia ....etc

Umbilical cord care in newborns



When the umbilical cord is cut, it leaves a stump, which then dries, heals, and within 1 to 3 weeks falls off. During the time the cord is healing it should be kept as clean and as dry as possible.

Observe the umbilical cord for infection. This does not occur frequently, but can spread quickly if infection does occur. Signs of infection would be:

- foul-smelling, yellow drainage from the cord
- redness and tenderness of the skin surrounding the cord

Another infrequent problem is active bleeding. This usually occurs when the cord is pulled off prematurely. Allow the cord to fall off naturally, even if it is only hanging on by a thread. Active bleeding is defined as every time you wipe away a drop of blood, another drop appears.

Occasionally instead of completely drying, the cord will form a granuloma, which is pink scar tissue. This granuloma drains a light-yellowish fluid. This condition will usually go away in about a week .

baby's umbilical cord stump should dry up and fall off by 8 weeks of age. If the baby's stump remains beyond that time, it may suggest an anatomical abnormality or immunological problem. See the primary care practitioner if the cord has not dried up and fallen off by the time the baby is 2 months old.

Artificial Feeding

Notes :

1- The mother milk is the first choice over any other feeding & any milk formula can not compared to it.

✎ This type of milk is skimmed from fats & Reconstituted to be rich in reduced protein & Fat molecules & Vitamins, minerals nedded for the optimum growth of this stage .suitable for the age of the baby

2- For normal baby who can not take enough quantity of milk from his mother you can prescribe any milk formula in the following table .

Baby milk available in Egypt that can be given for babies from the first day up to 6 months of age			
Aptamil 1	20.75	Milupa -	The milk formula in this table nearly have the
Aptamil 1 Plus	25.90	Milupa	
Bebelac 1	17.00	Nutricia	
Biomil	17.00	Fasska/Vacsera	
Nan 1	22.00	Nestle	
Nutrilon Premium	17.00	Nutricia	
S26 Gold	22.00	Wyeth	
Sunny Premium	2.90	FranceXPA	

3 - For babies who have Lactulose intolerance you can prescribe any milk formula in the following table

Milk for babies suffering from Lactulose intolerance		
Bebelac-FL	25.00	Nutricia
Dialac-LF	20.00	Nutricia
Novalac L.F.	15.00	Nutricia
Nutrilon Low lactose	16.00	Nutricia
S26 LF	18.50	Wyeth

4- For premature (low weight) babies you can prescribe any milk formula in the following table :

Baby milk available in Egypt that can be given for premature (low Weight) babies			
Aptamil Start	29.00	Milupa	The milk formula in this table nearly have the same compositions
Nenatal	23.30	Nutricia	
S26 LBW	22.00	Wyeth	

5- For babies suffering from regurgitation (rejecting milk = emesis)

you can prescribe any milk formula in table

Milk for babies suffering from regurgitation (rejecting milk from stomach)			
Bebelac AR	27.50	Nutricia	The milk formula in this table nearly have the same compositions
Nutrilon A.R.	12.80	Nutricia	

6- You can prescribe any milk formula in the following table for babies over 6 months of age & up to 12 months.

Baby milk available in Egypt that can be given for babies over 6 months of age & up to 12 months.			
Aptamil 2	19.00	Milupa	The milk formula in this table nearly have the same compositions
Bebelac-2	22.50	Nutricia	
Babysan2	17.00	Lactomisr	
Lactogen	13.25	Nestle	
Milupa 2	13.75	Milupa	
Nan 2	17.00	Nestle	
Nestogen	8.50	Nestle	
Promil	20.00	Wyeth	

7- You can also prescribe any Baby food for babies over 6 months of age & up to 3 years of age look the following table

Baby milk available in Egypt that can be given for babies over 6 months of age & up to 12 months.			
Aptamil 2	19.00	Milupa	The milk formula in this table nearly have the same compositions
Bebelac-2	22.50	Nutricia	
Babysan 2	17.00	Lactomisr	
Dialac-M	10.50	Nutricia	
Lactogen	13.50	Nestle	
Lactogen	2.90	Nestle	

8- You can prescribe any milk formula in table no. 26 for babies over 12 months of age & up 3 years of age

Baby Food available in Egypt that can be given for babies over 12 months of age & up 3 years of age			
Delilac	17.60	Nutricia	The milk formula in this table nearly have the same compositions
Lacto 3	16.00	LactoMisr	
Milupa 3	20.75	Milupa	
Progress	25.00	Wyeth	

9- As general rule most of the milk powder prepared by adding one measure of milk to 30 ml. of preboiled water & 2 measures for 60 ml. & so on.

10- Prepared milk must be given fresh & discared after 3 hours from preparing.

11- Changing the type of milk from one trade name to anthor may cause some abdominal cramps & gases.

12 - Most of the Milk preparations have two price one regular price & special reduced price by the ministry of Health (MOH) to only 2.90

Conjuctivities of the new born

R / Tobrex eye drops.
Or : Isopto-fenicol eye drops
قطرة للعين ٣ مرات يوميا

Notes : - Conjuctivities of the new born may be due to his weak immunity system & happened during delivery .

Newborn jaundice

Definition : newborn jaundice is a condition marked by high levels of bilirubin in the blood. The increased bilirubin cause the infant's skin and eyeballs to look yellow.

Causes, incidence, and risk factors : Bilirubin is a byproduct of the normal breakdown of red blood cells. The liver processes bilirubin so that it can be excreted by the body as waste. At birth, a baby's liver is still developing its ability to process bilirubin. Therefore, bilirubin levels are a little high at birth and jaundice is present to some degree in almost all newborns. This form of jaundice usually appears between day 2 and 5 and clears by 2 weeks. It usually causes no problems.

Breastfeeding jaundice is seen in 5 - 10% of newborns. This may occur when breast-fed babies do not take in enough breast milk and rarely requires treatment. Sometimes, however, breastfeeding does need to be interrupted and bottle-feeding substituted for a brief period of time to clear the jaundice.

Jaundice in a newborn is rarely caused by a serious illness. However, possible disorders that can cause jaundice in a baby include:

1- Biliary atresia
2- ABO incompatibility (similar to a transfusion_reaction, caused when fetal and maternal blood mingle before birth)
3- Rh incompatibility (Anti-Rh antibodies)
4- galactosemia
5- Cephalohematoma
6- Polycythemia
7- Glucose-6-phosphate dehydrogenase deficiency
8- Infections, including urinary tract infection and sepsis
9- Congenital cytomegalovirus (CMV) infection
10- Congenital toxoplasmosis
11- Congenital syphilis
12- Congenital herpes
13- Congenital Rubella
14- Congenital hypothyrodism
15- Taking sulfa drugs late in pregnancy
16- Crigler-Najjar syndrome
17- Spherocytosis (congenital hemolytic anemia)
18- Cystic fibrosis
19- Pyruvate Kinase deficiency
20- Thalassemia
21- Gilbert's syndrome
22- Lucey-Driscol syndrome
23- Gaucher's disease

24- Niemann-Pick disease
25- Alpha-1 antitrypsin deficiency

Symptoms

1-Yellow color of the skin
2-Poor feeding
3-Lethargy

Signs and tests: High levels of bilirubin in the blood

Treatment

R/ Phototherapy is the First line of treatment
Expose the infant to neon lamp, exchange position every 1 hour, continued for 24 hrs. Respons appears after 12 hours tell level below 12mg. /dl.

✎ Phythiological Jaundice continue up to the first week of baby age, Blood Bilirubin is less than 20/dl.
✎ Pathological Jaundice Blood Bilirubin more than 20/dl.

Treatment is usually not necessary. Keep the baby well-hydrated with breast milk or formula. Encourage frequent bowel movements by feeding frequently. This is because bilirubin is carried out of the body by the intestines in the stools. (Bilirubin is what gives stool their brown color).

Sometimes artificial lights are used on infants whose levels are very high, or in premature infants. These lights work by helping to break down bilirubin in the skin. The infant is placed naked under artificial light in a protected isolette to maintain constant temperature. The eyes are protected from the light.

In the most severe cases of jaundice, an exchange transfusion is required. In this procedure, the baby's blood is replaced with fresh blood. Recently, promising studies have shown that treating severely jaundiced babies with intravenous immunoglobulin is very effective at reducing the bilirubin levels to safe ranges.

Expectations (prognosis)

The jaundice usually resolves without treatment within 1 to 2 weeks.

Complications: Rare, but serious, complications from high bilirubin levels include:

- Kernicterus -- brain damage from very high bilirubin levels
- Deafness
- Cerebral palsy

Tonsillitis

Symptoms : High fever , sore throat , difficult swallowing

Diagnosis : Enlarged congested tonsilis with pus .

Treatment :

R / **Fluomox syrup** ملعقة كل ٦ ساعات
R / **Brufen syrup** ملعقة٣ مرات يوميا

Comment :

✎ Some doctors preferred to give antibiotic injection , as starting dose for one day, then following up with oral antibiotic, this will gives rapid recovery .
✎ The average pediatric dose of antibiotics containing amoxicillin & Cephalosporin is 25mg./kg. body weight , can be decreased or

increased according to the severity of the case .

✂Tonsillectomy should not be done before the age of 4 years & should be postponed for 3 weeks after *recovery from the acute infections* .

When adenotonsillectomy is recommended

1- Chronic tonsillitis .

2- Recurrent tonsillitis more than 5 years .

3- Previous history of Rheumatic fever .

4- Symptomatic adenoid hypertrophy e.g snoring , nasal speech , repeated attacks of otitis media .

Rickets

Introduction

Rickets is the softening and weakening of bones in children, usually because of an extreme and prolonged vitamin D deficiency.

Vitamin D is essential in promoting absorption of calcium and phosphorus from the gastrointestinal tract, which children need to build strong bones. A deficiency of vitamin D makes it difficult to maintain proper calcium and phosphorus levels in bones.

The body senses an imbalance of calcium and phosphorus in bloodstream and reacts by taking calcium and phosphorus from bones to raise blood levels to where they need to be. This softens or weakens the bone structure, resulting most commonly in skeletal deformities such as bowlegs or improper curvature of the spine. العمود الفقري. Osteomalacia is the adult version of rickets.

If a vitamin D or calcium deficiency causes rickets, adding vitamin D or calcium to the diet generally corrects any resulting bone problems for the child. Rickets due to a genetic condition may require additional medications or specialized treatment. Some skeletal deformities caused by rickets may need corrective surgery.

Signs and symptoms

Vitamin D deficiency begins months before physical signs and symptoms of rickets appear. When rickets symptoms develop, they may include:

Skeletal deformities. These include bowed legs, abnormal curvature of the spine, pelvic deformities and breastbone projection in the chest.

Fragile bones. Children with rickets are more prone to bone fractures.

Impaired growth. Delayed growth in height or limbs may be a result of rickets.

Dental problems. These include defects in tooth structure, increased chance of cavities, poor enamel and delayed formation of teeth.

Bone pain. This includes dull, aching pain or tenderness in the spine, pelvis and legs.

Muscle weakness. Decreased muscle tone may make movement uncomfortable.

Causes

Vitamin D acts as a hormone to regulate calcium and phosphorus levels in bones. The body absorb vitamin D from two sources:

• **Sunlight.** skin produces vitamin D when it's exposed to sunlight. This is the most common way for most adolescents and adults to produce the vitamin.

• **Food.** intestines absorb vitamin D from the foods eaten or from supplements or multivitamins which may be taken.

Other causes of rickets include:

1- Hereditary rickets (X-linked hypophosphatemia), an inherited form of rickets caused by the inability of the kidneys to retain phosphorus, or a complication of renal tubular acidosis, a condition in which kidneys are unable to excrete acids into urine
2- Lack of exposure to sunlight, which stimulates the body to make vitamin D

Screening and Diagnosis

1- Physical examination. check if the pain or tenderness is coming directly from the bones, instead of the joints and muscles surrounding them.
2- Blood tests. to measure calcium and phosphorus levels to see if they're normal.
3- X-rays. to take images of affected bones to look for softening or weakness.
4- Medical history. Kidney problems, celiac disease or diagnosis of a sibling with rickets may help lead to a rickets diagnosis.

Complications

While easily treated once it's diagnosed, rickets has a severe list of complications if left untreated. Untreated vitamin D deficiency rickets may lead to:

1- Delays in child's motor skills development
2- Failure to grow and develop normally
3- Increased susceptibility to serious infections
4- Skeletal deformities
5- Chronic growth problems that can result in short stature (adults measuring less than 5 feet tall)
6- Seizures
7- Dental defects

Treatment

- تعريض الطفل لأشعة الشمس .
- إعطاء الأطفال الأطعمة التى تحتوى على فيتامين د و الكالسيوم مثل اللبن و البيض و الكبد و غيرها

R/ Devarol Amp.
Or : Cal- D – B12 Amp.
حقنة عضل كل أسبوع

R / Calcium sandoz Syrup.
Or : Decal-B12 Syrup.
ملعقة صغيرة يوميا

Dehydration

What is dehydration?
Dehydration occurs when an infant or child loses so much body fluid that they are not able to maintain ordinary function. Dehydration may be caused by not drinking enough water, vomiting, diarrhea, or fever. If a child has a severe case of dehydration, he or she may not be able to replace body fluid by drinking or eating normally. In these cases hospitalization may be required.

Signs & Symptoms : These are some signs of dehydration to watch for in children:

1- Dry tongue and dry lips
2- No tears when crying
3- Fewer than six wet diapers per day for infants and no wet diapers for eight hours in toddlers
4- Sunken soft spot on infants
5- Sunken eyes
6- Dry and wrinkled skin
7- Deep, rapid breathing
8- Cool and blotchy hands and feet

How can I help child get better at home?

1- Encourage child to drink fluids that are unsweetened (sugary sodas, juices and flavored gelatin can irritate diarrhea).
2- Continue to breastfeed infants normally.
3- Electrolyte solutions may be helpful when given
4- Slowly increase fluid and food intake.
5- Give child acetaminophen for fever. Do not give child aspirin.
6- Allow child plenty of rest.
7- Watch for signs of worsening or returning dehydration.

Hospital treatment of dehydration
Dehydration can usually be treated at home, but severe cases may require hospitalization. Hospital care may include:

1- Fluids given intravenously (IV)
2- Acetaminophen for fever
3- Rest

Gastroenteritis

- **Look Details in Chapter (4) Gastrointestinal System**

Treatment :
In Infants & children :
- تجنب الجفاف بإعطاء سوائل مثل الأرز و شوربة الخضار و محلول الجفاف
- تجنب اللبن و منتجاته حتى يتوقف الإسهال

For infection :
R / Streptophenicol Susp.
Or : Miphenicol Susps.
ملعقة صغيرة كل ٦ ساعات

For vomiting :
R / Cortigen B6 ped. Amp.
حقنة بالعضل عند اللزوم

Then : R / Motinorm Syrup.
ملعقة صغيرة ٣ مرات يوميا

Or : Motinorm 10 mg (infentile)
Or 30 mg (children) Supp.
لبوسة كل ١٢ ساعة

For diarrhea : R / Kapect Syrup.
ملعقة صغيرة ٣ مرات يوميا

For colic :

R / **Visceralgin Syrup.** (for children)
For infant : R/ **Gripe water Syrup.**
Or : **Baby rest drops.**
ملعقة أو نقطتين بالفم ٣ مرات يوميا

Abdominal pain

Causes : Simple colic – constipation – abdominal gaseous distension
Clinically : Distended abdomen – Progressive crying .

Treatment :

In infants :

For colic & distension :

R / **Spasmotal drops .**
نقطة بالفم ٣ مرات يوميا 2-1

R / **Gripe water .**
ملعقة شاى صغيرة ٣ مرات يوميا

R / **Simethicone drops**
نقطة بالفم ٣ مرات يوميا 2-1

For Constipation :

R/ **Glycerin inf. Supp.**
لبوسة ١-٢ مرة عند اللزوم

For children > 2 Years :

For Colic :

R / **Visceralgine Syrup.**
ملعقة صغيرة ٣ مرات يوميا

For Distension :

R / **Digestin Syrup.**
ملعقة صغيرة قبل الأكل ٣ مرات يوميا

N.B : Other causes of constipation : may intestinal obstruction or due to iron present in the composition of baby milk , so before any treatment we should exclude pathological causes of constipation .

Napkin Dermatitis

Or it is called diaper rash which appears on the skin under a diaper , all over baby's bottom or a genital area .

In mild cases :

R / **Zinc olive lotion .**
دهان ٣ مرات يوميا

In case of candidal infection :

R / **Kenacomb Cream**
Or : **Quadriderm Cream .**
دهان ٣ مرات يوميا

Oral moniliasis (Thrush)

It is the infection of oral mucosa by candida

Treatment :

R / **Fungistatin oral drops .**
نصف قطارة إلى قطارة بالفم ٣-٤ مرات يوميا

R / **Daktarin oral gel .**
ربع إلى نصف ملعقة للفم ٣ مرات يوميا

Teething

Symptoms :

a. Increased drooling .
b. Restless or decreased sleeping .
c. Refusal of food .
d. Fussiness that comes & goes .
e. Bringing the hands to the mouth .
f. Mild rash around the mouth .

Also may accompanied by :

g. Fever .
h. Diarrhea .

i. Prolonged fussiness.
j. baby Rashes .

Treatment :

For fever :

R / Cetal Syrup.

ملعقة صغيرة ٣ مرات يوميا

Or : Voltaren 12.5 Supp.

لبوسة كل ١٢ ساعة أو عند اللزوم

Local anaesthetic :

R / Dentinox teething gel .

دهان للثة ٣ مرات يوميا

Calcium :

R / Pedical syrup.

ملعقة مرة واحدة يوميا

Acute otitis media

Definition : inflammation and infection of the middle ear. The middle ear is located just behind the eardrum.

Causes, incidence, and risk factors

Ear infections are common in infants and children in part because their eustachian tubes قنوات إستاكيوس become clogged تُسد easily. For each ear, a eustachian tube runs from the middle ear to the back of the throat. Its purpose is to drain fluid and bacteria that normally occurs in the middle ear. If the eustachian tube becomes blocked, fluid can build up and become infected.

Anything that causes the eustachian tubes and upper airways to become inflamed or irritated, or cause more fluids to be produced, can lead to a blocked eustachian tube. These include:

1- Colds and sinus infections
2- Allergies
3- Tobacco smoke or other irritants
4- Infected or overgrown adenoids
5- Excess mucus and saliva produced during teething

Ear infections occur most frequently in the winter. An ear infection is not itself contagious, but a cold may spread among children and cause some of them to get ear infections.

Risk factors include the following:

1- Not being breast-fed
2- Recent ear infection
3- Recent illness of any type (lowers resistance of the body to infection)
4- Day care (especially with more than 6 children)
5- Pacifier use
6- Genetic factors (susceptibility to infection may run in families)
7- Changes in altitude or climate
8- Cold climate

Symptoms

An acute ear infection causes pain (earache). In infants, the clearest sign is often irritability and inconsolable crying. Many infants and children develop a fever or have trouble sleeping.

Other possible symptoms include:

- Fullness in the ear
- Feeling of general illness
- Vomiting

- Diarrhea
- Hearing loss in the affected ear

The child may have symptoms of a cold, or the ear infection may start shortly after having a cold.

Signs and tests

- Medical history .
- Physical examination : Using an instrument called an otoscope, look inside child's ears. If infected, there may be areas of dullness or redness or there may be air bubbles or fluid behind the eardrum. The fluid may be bloody or purulent (filled with pus). The physician will also check for any sign of perforation (hole or holes) in the eardrum.

Treatment :

Nasal decongestant :
R / Afrin ped. Nasal Drops .
نقطة فى كل أنف ٣ مرات يوميا

Antibiotic :
R / Ceporex 250 mg. Susp.
Or : Augmentin 156 or 312 susp.
ملعقة كل ٨ ساعات
+ R / Otal ear drops.
نقط للأذن ٣ مرات يوميا

Analgesic :
R / Cetal Syrup. ملعقة ٣ مرات يوميا
Or : Cetal drops.
٥ نقط بالفم أو ملعقة صغيرة ٣ مرات يوميا

Childhood asthma

Continuous inflammation of the airways leading to the lungs. This inflammation makes the airways overly sensitive and prone to tightening and constricting when irritated.

Signs and symptoms

- Coughing that wakes child in the night.
- Repeated attack of Wheezing
- Shortness of breath
- Chest congestion
- Chest tightness

Additional signs and symptoms of asthma in infants include:

- Rattly cough كحة بها ثرثرة
- Recurrent bronchitis with croup, bronchiolitis or pneumonia

Causes

Asthma triggers, such as smoke or allergens, can make the airway muscles tighten and constrict and may cause asthma symptoms. Triggers are different for everyone. The most common triggers include:

Irritants

- Tobacco smoke
- Exercise
- Weather changes or cold air
- Environmental pollutants

Allergens

- Dust mites
- Pet dander
- Pollen
- Mold

Other factors

- Upper respiratory infections
- Rhinitis or sinusitis
- Gastroesophageal reflux disease (GERD), a condition in which stomach acids back up into the esophagus .

Screening and Diagnosis

- family history of asthma or allergic diseases such as eczema, hives or hay fever.
- Pulmonary function testing (spirometry), in children after 6 years age .

Treatment

Management in hospital :

Nebulizer : 1/2 cm Ventolin + 1/2 cm atrovent + 2 cm saline

After the nebulizer by 15 min. , if there is still wheezing → repeat the nebulizer .

R / Solucortef amp.

- given if chest is still wheezy after 3 nebulizer sittings .

- Dose : 10 mg / kg (IV) .

R / Aminophylline amp. + fortacortine amp.

- Given if there is no response for solucortef .

- Dose : Aminophylline (50 mg / 5 ml) : 0.1 – 0.2 mg / kg / dose .

Fortacortine (8 mg / 2 ml) : 0.25 – 0.5 mg / kg / dose .

Home management of asthma :

- Child should avoid triggers factors of asthma mentioned before .

Bronchodilator :

R / Minophylline ped. Supp.

لبوسة كل ١٢ ساعة

R / Ventolin inhaler (for children above 8 years)

بخة ٣-٤ مرات يوميا

Corticosteriods :

R / Apidone Syrup. ملعقة ٣ مرات يوميا لمدة ٣ أيام ثم ملعقة مرتين يوميا لمدة ٣ أيام ثم ملعقة مرة واحدة يوميا

Antibiotics :

R / E-mox 250 mg Syrup.

ملعقة كل ٨ ساعات

For mucous & cough :

R / Bisolvon Syrup.

ملعقة ٣ مرات يوميا

R / Avipect syrup.

ملعقة ٣ مرات يوميا

For long-term prevention :

R / Zaditen Syrup. ملعقة كل ١٢ ساعة

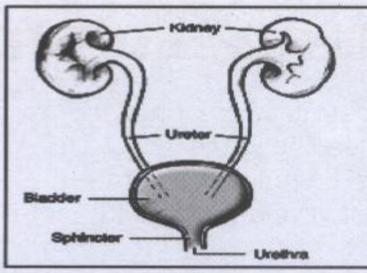
Other long-term control medications are available and might be suitable for child, such as montelukast e.g

R / Singulair 5mg. tab.

قرص واحد مضغ يوميا عند النوم

Nocturnal Enuresis (Urinary Incontinence)

Repeated involuntary urination during sleep .



How does the urinary system work?

The bladder stores urine, then releases it through the urethra, the canal that carries urine to the outside of the body. Controlling this activity involves nerves, muscles, the spinal cord, and the brain.

The bladder is composed of two types of muscles: the detrusor, a muscular sac that stores urine and squeezes to empty; and the sphincter, a circular group of muscles at the bottom or neck of the bladder that automatically stay contracted to hold the urine in and automatically relax when the detrusor contracts to let the urine into the urethra. A third group of muscles below the bladder (pelvic floor muscles) can contract to keep urine back.

A baby's bladder fills to a set point, then automatically contracts and empties. As the child gets older, the nervous system matures. The child's brain begins to get messages from the filling bladder and begins to send messages to the bladder to keep it from automatically emptying until the child decides it is the time and place to void.

Incontinence happens less often after age 5: About 10 percent of 5-year-olds, 5 percent of 10-year-olds, and 1 percent of 18-year-olds experience episodes of incontinence. It is twice as common in boys as in girls.

Failures in this control mechanism result in incontinence. Reasons for this failure range from simple to complex.

What causes nighttime incontinence?

After age 5, wetting at night—often called bedwetting or sleepwetting—is more common than daytime wetting. Experts do not know what causes nighttime incontinence. Young people who experience nighttime wetting are usually physically and emotionally normal. Most cases probably result from a mix of factors including slower physical development, an overproduction of urine at night, a lack of ability to recognize bladder filling when asleep, and, infrequently, anxiety. For many, there is a strong family history of bedwetting, suggesting an inherited factor.

Slower Physical Development

Between the ages of 5 and 10, bedwetting may be the result of a small bladder capacity, long sleeping periods, and underdevelopment of the body's alarms that signal a full or emptying bladder. This form of incontinence will fade away as the bladder grows and the natural alarms become operational.

Excessive Output of Urine During Sleep

Normally, the body produces a hormone that can slow the production of urine. This hormone is

called antidiuretic hormone, or ADH. The body normally produces more ADH at night so that the need to urinate is lower. If the body doesn't produce enough ADH at night, the production of urine may not be slowed down, leading to bladder overfilling. If a child does not sense the bladder filling and awaken to urinate, then wetting will occur.

Anxiety

Experts suggest that anxiety-causing events occurring in the lives of children ages 2 to 4 might lead to incontinence before the child achieves total bladder control. Anxiety experienced after age 4 might lead to wetting after the child has been dry for a period of 6 months or more. Such events include angry parents, unfamiliar social situations, and overwhelming family events such as the birth of a brother or sister.

Incontinence itself is an anxiety-causing event. Strong bladder contractions leading to leakage in the daytime can cause embarrassment and anxiety that lead to wetting at night.

Genetics

Certain inherited genes appear to contribute to incontinence. In 1995, Swedish researchers announced they had found a site on human chromosome 13 that is responsible, at least in part, for nighttime wetting. If both parents were bedwetters, a child has an 80 percent chance of also being a bedwetter. Experts believe that other, undetermined genes also may be involved in incontinence.

Structural Problems

Nerve damage associated with the birth defect spina bifida can cause incontinence.

What causes daytime incontinence?

An Overactive Bladder

Muscles surrounding the urethra—the tube that takes urine away from the bladder—have the job of keeping the passage closed, preventing urine from passing out of the body. If the bladder contracts strongly and without warning, the muscles surrounding the urethra may not be able to keep urine from passing. This often happens as a consequence of urinary tract infection (UTI) and is more common in girls.

Infrequent Voiding

Infrequent voiding refers to a child's voluntarily holding urine for prolonged intervals. For example, a child may not want to use the toilets at school or may not want to interrupt enjoyable activities, so he or she ignores the body's signal of a full bladder. In these cases, the bladder can overfill and leak urine. In addition, these children often develop UTIs, leading to an irritable or overactive bladder.

Other Causes

Some of the same factors that contribute to nighttime incontinence may act together with infrequent voiding to produce daytime incontinence. These factors include

- small bladder capacity
- structural problems
- anxiety-causing events
- pressure from a hard bowel movement (constipation)
- drinks or foods that contain caffeine, which increases urine output and may also cause spasms of the bladder muscle, or other ingredients to which the child may have an allergic reaction, such as chocolate or artificial coloring

Sometimes overly strenuous toilet training may make the child unable to relax the sphincter and the pelvic floor to completely empty the bladder. Retaining urine, or incomplete emptying, sets the stage for UTIs.

What treats or cures incontinence?

Growth and Development

Most urinary incontinence fades away naturally. Here are examples of what can happen over time:

- Bladder capacity increases.
- Natural body alarms become activated.
- An overactive bladder settles down.
- Production of ADH becomes normal.
- The child learns to respond to the body's signal that it is time to void.
- Stressful events or periods pass.

Many children overcome incontinence naturally—without treatment—as they grow older. The number of cases of incontinence goes down by 15 percent for each year after the age of 5.

Medications

- Imipramine, is used to treat sleepwetting. It acts on both the brain and the urinary bladder. Many patients, however, relapse once the medication is withdrawn.

R / Tofranil (Imipramin) 25 mg tab.

قرص قبل النوم لمدة شهرين ثم قرص قبل النوم كل يومين لمدة شهر ثم قرص قبل النوم كل ثلاثة أيام لمدة شهر آخر .

<u>In resistant cases</u> :

- Nighttime incontinence may be treated by increasing ADH levels. The hormone can be boosted by a synthetic version known as desmopressin, or DDAVP, which is available in pill form, nasal spray, or nose drops. Desmopressin is approved for use in children.

R / Minirin (desmopressin) Nasal spary .

بخة فى الأنف عند النوم ويستمر العلاج لمدة ٦ أسابيع ثم ينقص تدريجيا

- If a young person experiences incontinence resulting from an overactive bladder, a medicine that helps to calm the bladder muscle may be prescribed. This medicine

controls muscle spasms and belongs to a class of medications called anticholinergics.

R / Uripan (Oxybutynin) 5 mg tab.
Or : Uripan Syrup.
قرص أو ملعقة صغيرة قبل النوم بنصف ساعة

Bladder Training and Related Strategies

Bladder training consists of exercises for strengthening and coordinating muscles of the bladder and urethra, and may help the control of urination. These techniques teach the child to anticipate the need to urinate and prevent urination when away from a toilet. Techniques that may help nighttime incontinence include

- determining bladder capacity
- drinking less fluid before sleeping
- developing routines for waking up

Unfortunately, none of these techniques guarantees success.

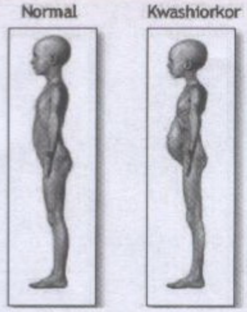
Techniques that may help daytime incontinence include

- urinating on a schedule—timed voiding—such as every 2 hours
- avoiding caffeine or other foods or drinks that you suspect may contribute to child's incontinence
- following suggestions for healthy urination, such as relaxing muscles and taking time

Incontinence is also called enuresis

- Primary enuresis is wetting in a person who has never been dry for at least 6 months.
- Secondary enuresis is wetting that begins after at least 6 months of dryness.
- Nocturnal enuresis is wetting that usually occurs during sleep, also called nighttime incontinence.
- Diurnal enuresis is wetting when awake, also called daytime incontinence.

Kwashiorkor



Alternative names
Protein malnutrition; Protein-calorie malnutrition; Malignant malnutrition

Definition
Kwashiorkor is a form of malnutrition caused by inadequate protein intake in the presence of fair to good energy (total calories) intake.

Causes, incidence, and risk factors
Kwashiorkor occurs most commonly in areas of famine المجاعة , limited food supply, and low levels of education, which can lead to

inadequate knowledge of proper diet.

Early symptoms of any type of malnutrition are very general and include fatigue, irritability, and lethargy الخمود . As protein deprivation الحرمانcontinues, growth failure, loss of muscle mass, generalized swelling (edema), and decreased immunity occur.

A large, protuberant belly بروز البطن is common. Skin conditions (such as dermatitis, changes in pigmentation, thinning of hair, and vitiligo) are seen frequently. Shock and coma precede death.

Improving calorie and protein intake will correct kwashiorkor, provided that treatment is not started too late. However, full height and growth potential will never be achieved in children who have had this condition.

Severe kwashiorkor may leave a child with permanent mental and physical disabilities. There is good statistical evidence that malnutrition early in life permanently decreases IQ معامل الذكاء .

Symptoms

- Failure to gain weight and failure of linear growth
- Irritability
- Lethargy or apathy اللا مبالاة
- Decreased muscle mass
- Swelling (edema)
- Large belly that stick out (protrudes)
- Diarrhea
- Dermatitis
- Changes in skin pigment; may lose pigment where the skin has peeled away (desquamated) and the skin may darken where it has been irritated or traumatized صَدَمَ
- Hair changes -- hair color may change, often lightening or becoming reddish, thin, or brittle
- Iincreased and more severe infections due to damaged immune system
- Shock (late stage)
- Coma (late stage)

Signs and tests

The physical examination may show an enlarged liver (hepatomegaly) and general swelling.

Tests may include:

- Urinalysis
- Serum creatinine
- Creatinine clearance
- BUN
- Serum potassium
- Arterial blood gas
- Total protein levels
- CBC (complete blood count) -- may show anemia

Treatment

→ Mild and moderate cases (Home management):

Diet (high protein) :

1-Breast fed infants :

- Continue breast feeding Plus humanized milk (mixed feeding) .

R / Bebelac 1 . Or : S26 Gold .
Or : Nan 1 . or : Sunny baby
Or : Aptamil 1 .

مكيال لكل ٣٠ مل ماء سبق غليه

- If frequent diarrhea is present , lactose free milk is used .
R / Bebelac FL . Or : S26 LF .

2- Weaned infants (high protein diet) e.g. Milk and chicken and eggs , beans and cottage cheese .

Vitamin supplementation :
R / Bebe vit drops .
نقط بالفم مرة واحدة يوميا 5

Iron supplementation :
R / Fer-in-sol drops .
نقط بالفم مرة واحدة يوميا 5

→ **Severe cases :**
Give antibiotic :
R / Gramacyin 20 or 40 mg amp.
Or : Claforan amp.

Notes :
Treatment varies depending on the severity of the condition. Shock requires immediate treatment with restoration of blood volume and maintenance of blood pressure.

Calories are given first in the form of carbohydrates, simple sugars, and fats. Proteins are started after other caloric sources have already provided increased energy. Vitamin and mineral supplements are essential.

Since the person will have been without much food for a long period of time, starting oral feedings can present problems, especially if the caloric density is too high at first. Food must be reintroduced slowly, carbohydrates first to supply energy, followed by protein foods.

Many malnourished children will have developed intolerance to milk sugar (lactose intolerance) and will need to be given supplements with the enzyme lactase, if they are to benefit from milk products.

Prevention : Adequate diet with appropriate amounts of carbohydrate, fat (minimum of 10 percent of total calories), and protein (12 percent of total calories) will prevent kwashiorkor.

Chapter-2
Infectious diseases

Common cold (Coryza)
نزلة البرد

Symptoms & Diagnosis :

- Caused by a virus that inflames the membranes in the lining of the nose and throat, colds can be the result of more than 200 different viruses. However, among all of the cold viruses, the rhinoviruses and the coronaviruses cause the majority of colds.

- the most common symptoms of the common cold :-

1- stuffy, runny nose
2- scratchy, tickly throat
3- sneezing
4- watering eyes
5- low-grade fever
6- sore throat
7- mild hacking cough
8- achy muscles an bones
9- headache
10- mild fatigue
11- chills
12- watery discharge from nose that thickens and turns yellow or green

- Colds usually start two to three days after the virus enters the body and symptoms last from several days to several weeks.

- Spread through airborne droplets that are coughed or sneezed into the air by the contagious person and then inhaled by another person. Colds can also be spread by hand-to-hand or hand-to-infected-surface contact, after which a person touches his/her face.

- A cold and the flu (influenza) are two different illnesses. A cold is relatively harmless and usually clears up by itself after a period of time, although sometimes it may lead to a secondary infection, such as an ear infection. However, the flu can lead to complications, such as pneumonia and even death.

Cold Symptoms	*Flu Symptoms*
Low or no fever	High fever
Sometimes a headache	Always a headache
Stuffy, runny nose	Clear nose
Sneezing	Sometimes sneezing
Mild, hacking cough	Cough, often becoming severe
Slight aches and pains	Often severe aches and pains
Mild fatigue	Several weeks of fatigue
Sore throat	*Sometimes a sore throat*

Normal energy level	Extreme exhaustion

Prevention

The best way to avoid catching the common cold is to wash hands frequently and avoid close contact with people who have colds.

Treatment

- راحة تامة بالسرير .
- تناول سوائل دافئة مع وجبات خفيفة .

Adults

Decongestant :

R/ Noflu tab.
قرص ٣ مرات يوميا

R / Afrin Nasal drops / spray
OR / Otrivin Nasal drops .
نقطتان فى كل أنف ٣ مرات يوميا

Cough medicine :

R/ Ultrasolve Syrup.
ملعقة ٣ مرات يوميا

Pain & fever Reliever

R /Brufen 600 Tab.
قرص كل ١٢ ساعة

Vitamin C :

R / Vitacid C eff . tab.
قرص فوار على نصف كوب ماء مرتين يوميا

Antibiotic in case of secondary bacterial infection : (middle ear , sinus infections , high fever , swollen glands , or a mucus-producing cough)

R / Flumox 500 Cap.
كبسولة كل ٨ ساعات

Or : Flumox 1 gm. Vial .
حقنة بالعضل كل ١٢ ساعة

Children

Decongestant :

R/ Rhinopro Syrup .
ملعقة كل ١٢ ساعة

Nasal drops :

R/ Afrin ped. Nasal drops.
نقط للأنف ٣ مرات يوميا

Cough medicine :

R/ Toplexil Syrup .
ملعقة ٣ مرات يوميا

Antihistaminic :

R / Avil syrup . ملعقة ٣ مرات يوميا

Pain & fever Reliever :

R/ Brufen Syrup . ملعقة ٣ مرات يوميا

Antibiotic in secondary infection :

R / Flumox or Ceporex 250 Syrup. ملعقة كل ٦ساعات

Infant

Decongestant :

R/ Rhinostop oral drops .
1/4 إلى ١/٢ القطارة ٣ مرات يوميا

Nasal drops :

R / Otrivine saline nasal drops .
1- 2 نقط فى كل أنف ٣ مرات يوميا

Antihistaminic :

R / Avil syrup .
ملعقة شاى صغيرة ٣ مرات يوميا

Pain & fever Reliever :

R / Tempra drops .
5-10 نقط بالفم ٣ مرات يوميا

Or : Dolphin 12.5 inf. Supp.
لبوسة كل ١٢ ساعة

Vitamin C : R / Ceviline drops .
5 نقط بالفم ٣ مرات يوميا

AB in secondary infection :

R / Curisafe drops
5-15 نقط بالفم كل ١٢ ساعة

Or : Cefotax 500mg. vial .
تحلل فى ٤ سم ماء و يعطى ٢سم كل ١٢ ساعة

NB - paracetamol rather than aspirin should be used for fever especially in children.

Cause : Aspirin, when given as treatment for viral illnesses in children, has been associated with Reye's syndrome, a potentially serious or deadly disorder in children. Therefore, pediatricians and other healthcare providers recommend that aspirin (or any medication that contains aspirin)

not be used to treat any viral illnesses (such as colds, the flu, and chickenpox) in children.

Influenza (Flu)

Influenza (or flu) is a highly contagious viral respiratory tract infection.
Beside all symptoms of the common cold such as
Headache , sore throat , cough usually dry , runny nose and sneezing ,
Flu also can cause the following :
Chills , myalgia , malaise , backache , pain in bone , prostration , Flurred tongue , Anorexia , sweating , a sudden fever (as higher as 38 °c)& Leucopenia . Influenza usually resolves within 5-7 days unless complicated by L.R.T . infections .
Complications : Bronchitis , Pneumonia , Sinusitis , Otitis media , encephalitis , pericarditis , Reye's syndrome .

- Influenza viruses are divided into three types, designated as A, B, and C :

1- Influenza types A and B are responsible for epidemics of respiratory illness that occur almost every winter and are often associated with increased rates for hospitalization and death. Efforts to control the impact of influenza are focused on types A and B.

2- Influenza type C usually causes either a very mild respiratory illness or no symptoms at all. It does not cause epidemics and does not have the severe public health impact that influenza types A and B do.

Influenza viruses continually mutate or change, which enables the virus to evade the immune system of its host. This makes people susceptible to influenza infection throughout their lives. <u>The process works as follows:</u>

1. A person infected with influenza virus develops antibody against that virus.
2. The virus mutates or changes.
3. The "older" antibody no longer recognizes the "newer" virus.
4. Reinfection occurs.

The older antibody can, however, provide partial protection against reinfection. Currently, three different influenza strains circulate worldwide: two type A viruses and one type B. Type A viruses are divided into subtypes based on differences in two viral proteins called hemagglutinin (H) and neuraminidase (N). The current subtypes of influenza A are designated A(H1N1) and A(H3N2).

- The influenza virus is generally passed from person to person by airborne transmission (i.e., sneezing or coughing). But, the virus can also live for a short time on objects -- such as doorknobs, pens, pencils, keyboards, telephone receivers, and eating or drinking utensils. Therefore, it may also be spread by touching something that has been handled by someone infected with the virus and

then touching own mouth, nose, or eyes.

Symptoms : as in the table before ± rarely nausea, vomiting, and diarrhea

N.B. Fever and body aches usually last for three to five days, but cough and fatigue may last for two weeks or more.

Prevention : by *Trivalent vaccine* (from inactivated viruses) , reserving split (Fragmented virus) .

1- A new influenza vaccine is introduced Every year to combat the current strains of influenza affecting the population , the vaccine must be taken (between September and mid-November) .
2- Indications : for Diabetes , chronic lung , heart or renal disease , immunosuppression , haemoglobinpathies , medical staff & those > 65 years old .
3- Contraindication : The most serious side effect that can occur after influenza vaccination is an allergic reaction in people who have a severe allergy to eggs. For this reason, people who have an allergy to eggs should not receive the influenza vaccine.

- mild side effects may occur , such as headache or low-grade fever, some soreness at the vaccination site for about a day after receiving the vaccination.

Treatment

Many people takes influenza vaccine one month before the winter season (during October) e.g.

R /Influvac influenza vaccine

Or : Fluarix influenza vaccine

Or : Vaxigrip influenza vaccine .

١سم تحت الجلد أو بالعضل و يكرر بعدأسبوعين

R / Adamine Cap.

كبسولة مرتين يوميا لمدة ١٠ أيام

. راحة تامة بالسرير -

. تناول وجبات خفيفة مع سوائل دافئة -

Adult :

For rhinitis

R / Clarinase tab.

قرص كل ١٢ ساعة

OR / Comtrex tab.

قرص كل ٨ ساعات

For bacterial infection

R / Velosef 1gm. Vial.

Or : Cefazone 1gm. Vial .

. حقنة بالعضل كل ١٢ ساعة لمدة أربع ايام

OR / Ibiamox 500 cap.

Or : Ampiclox 500 Cap.

كبسولة كل ٦ ساعات

Infant & Children

R/ Hiconcil Susp.

Or: Amoxil Susp.

ملعقة صغيرة كل ٦ ساعات

For dry Cough :

R / Codipront Syrup.

ملعقة صغيرة ٣ مرات يوميا

For productive cough :

R / Toplexil Syrup

ملعقة صغيرة ٣ مرات يوميا

Chicken-pox (Varicella)
الجديرى

- The disease is caused by the varicella-zoster virus (VZV). Transmission occurs from person-to-person by direct contact or through the air.

Sypmtoms : Symptoms may include:

- fatigue and irritability 1 to 2 days before the rash begins
- itchy rash on the trunk, face, under the armpits, on the upper arms and legs, inside the mouth and sometimes in the windpipe and bronchial tubes. The rash usually turns into blisters, which dry and become scabs in 4 to 5 days.
- fever
- feeling ill
- decreased appetite
- muscle and/or joint pain
- cough or runny nose
- Once infected, chickenpox may take up to 10 to 21 days to develop.

Complication

1- secondary bacterial infections

2- pneumonia
3- encephalitis (inflammation of the brain)
4- cerebellar ataxia (defective muscular coordination)
5- transverse myelitis (inflammation along the spinal cord)
6- Reye's syndrome (a serious condition; a group of symptoms that may affect all major systems or organs)

Children with varicella should not be given aspirin because administration of aspirin to children with varicella increases the risk of Reye's syndrome.

Treatment :

- راحة تامة بالسرير حتى تنخفض درجة الحرارة .
- يعزل المريض حتى تختفى القشور .
- وجبات خفيفة مع الإستحمام المتكرر .

Medication :
For fever :
R / **Tempra Syrup.** ملعقة ٣ مرات يوميا
For relieving itchiness :
R / **Calamyl lotion .**
سأسأة للطفح الجلدى ٣ مرات يوميا
Or : **Gentian Violet .**
دهان للطفح الجلدى ٣ مرات يوميا
R / **Tavagyl Syrup.**
نصف - ملعقة ٣ مرات يوميا
For bacterial infection :
R /**Hibiotic 156 & 312 Syrup.**
ملعقة صغيرة كل ٦ ساعات 1-2
For Cough :
R / **Coughseed supp.**
لبوسة كل ١٢ ساعة

Antiviral drug acyclovir for severe cases ;
R/ **Zovirax Syrup.**
ملعقة صغيرة ٣ مرات يوميا

Measles (Rubeola)
الحصبة

- Common childhood disease .
- Exposure 10-14 days before onset in an unvaccinated patient .

Symptoms : usually begin with flu-like symptoms ;

- fever
- runny nose
- sore eyes (Conjunctivitis)
- cough
- feeling ill (malaise)
- swollen lymph nodes
- headache
- Koplik's spots (bluish white ulcers in the baccal mucosa) .

In most cases, three to four days into the course of the disease, a red rash appears, covering the whole body. This rash fades after three days as symptoms subside.

Complications :

- Ear (Otitis media) and chest infections (bronchitis , pneumonia) .
- diarrhea, vomiting, and abdominal pain
- encephalitis (inflammation of the brain)

Prevention : Childhood vaccinations against measles at 15 months of age by attenuated live virus vaccine (usually in combination with the mumps and rubella) Or MMR provides immunity for most people. People who have had the measles are immune for life. Dose : one dose ½ ml S.C .

N.B :Vaccination should be avoided during pregnancy and for 3 months before pregnancy .

Infants under 8 months of age usually are safe from contracting the measles, because they have acquired some immunity from their mothers.

Treatment

- يعزل المريض .
- راحة تامة فى السرير .
- وجبات خفيفة .

Medication :

For fever & headachè :

R / Paramol Syrup.
ملعقة صغيرة ٣ مرات يوميا

Or : Tempra drops.
٥-١٠نقط ٣ مرات يوميا

For runny nose :

R / Otrivine ped. Nasal drops .
نقط للأنف ٣ مرات يوميا

R / Rhinomol Syrup.
ملعقة صغيرة ٣ مرات يوميا

For cough :

R / Balsam inf . Syrup.
ملعقة ٣ مرات يوميا

For Conjunctivitis :

R /Isopto fenicol eye drops .
قطرة للعين ٤ مرات يوميا

For rash :

R / Calamine lotion .
سأسأة للطفح الجلدى ٣ مرات يوميا

For Infection :

R / Ceporex 125 & 250 Syrup.
ملعقة صغيرة كل ٦ ساعات 1-2

For Malaise :

R / Multi-sanstol Syrup.
ملعقة صغيرة يوميا

Treatment of post-mealses encephalitis :

1-Syptomatic treatment .
2-Lumbar puncture بزل نخاع
٣-Anticonvulsants : مضادات الصرع
R/ Valinil 5 tab. قرص ٣ مرات يوميا

German Measles (Rubella)
الحصبة الألمانى

1- An acute viral infection that causes a mild illness in children and slightly more severe illness in adults. The disease is spread person-to-person through airborne particles and takes two to three weeks to incubate.
2- Rubella usually affects children ages 6 to 12 .

Symptoms :

- rash (usually begins at the face and progresses to trunk and extremities and lasts about 3 days)
- slight fever
- enlarged lymph nodes
- headache

Rubella in pregnant women may cause serious complications in the fetus, including a range of severe birth defects.

Complications :
Encephalitis , Thrombocytopenic purpura , & polyarthritis of hands & feet .

Laboratory Diagnosis :
Serological testing (ELISA , hemagglutination inhibition) : four fold increase in antibody titer (IgG) or detection of specific IgM .

Prevention :
By vaccination using MMR (mumps-measles-rubella) vaccine
or using live attenuated single rubella vaccine for girls before marriage .People who have had rubella are immune for life.

Treatment :
راحة تامة مع وجبات خفيفة
Medication :
R / Paramol Syrup.
Or : Aspirin Chew. tab.
١-٢ قرص مضغ أو ملعقة ٣ مرات يوميا
R/ Calamine lotion .) for rash)
دهان ٣ مرات يوميا

D.D. of measles & German measles

	Measles	German measles
Incubation period	10-14 days	14-20days
Course	Severe	Mild
Prodrome	Fever,coryza , cough , conjunctivitis , Koplik's spots	Not seen
Rash	Desquamates & it leaves brownish staining	Fades in 3 days without desquamation or stainig .
Lymphadenopathy	No	Present
Pregnancy	Less svere in pregnancy	Severe in pregnancy

Mumps (Epidemic parotitis)
الغدة النكفية أو أبو اللكيم

An acute and highly contagious viral illness that usually occurs in childhood. Spread by airborne droplets from the upper respiratory tract, the disease usually takes two to three weeks to appear.

Symptoms : Many children have no or very mild symptoms

- mild sickness
- discomfort in the salivary glands usually parotid gland , which may become swollen and tender
- difficulty chewing
- fever
- headache
- pain in salivary glands when eating sour foods

Complications :

1- meningitis - an inflammation of the membrane that covers the brain and spinal cord.
2- orchitis - inflammation of the testicle.
3- mastitis - inflammation of breast tissue.
4- oophoritis - inflammation of the ovary.
5- pancreatitis - inflammation of the pancreas

Diagnosis :

Laboratory Diagnosis :

Isolation of the virus from saliva , urine or CSF on monkey kidney cells . Serological testing (ElISA , hemagglutination inhibition) : four fold increase in antibody titer (IgG) or detection of specific IgM .

Prevention : immunization by using MMR (living attenuated mumps-measles-rubella) vaccine , which is given to susceptible individuals over one year of age . People who have had the mumps are immune for life.

Treatment

. عزل المريض حتى يزول ورم الغدة -
راحة تامة مع وجبات خفيفة -

R /Voltaren 12.5 & 25mg. Supp.
لبوسة شرجى كل ١٢ ساعة
R / Fruital Syrup.
ملعقة صغيرة مرة واحدة يوميا
R/ Curasef 250 syrup.
Or:Hibiotic 312 syrup.
ملعقة ٣ مرات يوميا

- Suspend the scrotum in a suspensory + ice bags (In orchitis)
تعلق الخصية الملتهبة + كمادات ثلج
- Lumbar puncture to reduce headache (in meningitis) .
بزل نخاع فى حالات الالتهاب السحائى الدماغى

- Hydrocortisone sodium succinate (100 mg. I.V , followed by 20 mg prednisone orally every 6 hours for 2-3 days)

Whooping cough (pertussis)
السعال الديكى

- Mainly affects infants and young children. Caused by a bacterium, it is characterized by paroxysms (intense fits or spells) of coughing that end with the characteristic whoop as air is inhaled.

Symptoms : usually takes one to three weeks to incubate .

1- coughing
2- sneezing
3- nasal discharge
4- fever
5- sore, watery eyes
6- whooping
7- lips, tongue, and nail beds may turn blue during coughing spells) Cyanosis) .

Whooping cough can last up to 10 weeks and can lead to pneumonia.

Diagnosis : Culture taken from the nose.

Preventing:
Although a vaccine (Diphtheria , tetanus & pertussis " DTP ") has been developed against whooping cough, which is routinely given to children in the first year of life, cases of the disease still occur, especially in infants younger than 6 months of age.

Treatment

. تجنب أى مثير للكحة -
. وجبات خفيفة و دافئة -

To prevent bacterial infection
R / Curam 156& 312 mg.Syrup
ملعقة صغيرة كل ٦ ساعات

For Cough :
R / Toplexil Syrup.
ملعقة ٣ مرات يوميا
R / Eucaphaol Supp.
لبوسة كل ١٢ ساعة

For fever :
R / Abimol Syrup.
ملعقة صغيرة ٣ مرات يوميا

Vitamin :
R / Mediavit Syrup.
ملعقة صغيرة يوميا

During a pnoeic attacks :
- Ensure patient airway .
- Suction of pharyngeal secretions .
- Oxygen suuply & artificial respiration .

Diphtheria الخانوق -الدفتريا

Diphtheria is an acute bacterial disease that can infect the body in two areas: the throat (respiratory diphtheria) and the skin (skin or cutaneous diphtheria). A common childhood disease .

The diphtheria bacterium can enter the body through the nose and mouth. However, it can also enter through a break in the skin. It is transmitted from person to person by respiratory secretions or droplets in the air. After being exposed to the bacterium, it usually takes 2 to 4 days for symptoms to develop.

Symptoms : may include

Respiratory diphtheria
When a person is infected with diphtheria, the bacterium usually multiplies in the throat, leading to the respiratory version of diphtheria. A membrane may form over the throat and tonsils, causing a sore throat. Other common symptoms of respiratory diphtheria may include:

1- breathing difficulty
2- husky voice
3- enlarged lymph glands
4- increased heart rate (tachycardia) .
5- stridor (a shrill breathing sound heard on inspiration)
6- nasal drainage
7- swelling of the palate (roof of the mouth)
8- sore throat
9- low-grade fever

10- malaise
Persons may die from asphyxiation when the membrane *(thick gray membrane covering the throat and tonsils*) obstructs breathing. Other complications of respiratory diphtheria are caused by the diphtheria toxin released in the blood, leading to heart failure.

Skin (cutaneous) diphtheria
With this type of diphtheria, the symptoms are usually milder and may include yellow spots or sores (similar to impetigo) on the skin.
Prevention : by immunization with Diphtheria toxoid (DTP)

Treatment :

N.B. whenever you suspect diphtheria you should start Treatment immediately . never waiting for result of the swab.
. راحة تامة بالسرير . – وجبات خفيفة -

For toxin :
R / Diphtheria Antitoxin
يعطى بالوريد بعد إجراء إختبارات للحساسية

For Infection :
R / Pencillin Vial .
حقنة بالعضل أو الوريد كل ٦ ساعات

Or : **Cefobid 0.5gm Vial .**
حقنة بالعضل أو الوريد كل ٨-١٢ ساعة

For fever :
R / Brufen Syrup . ملعقة ٣ مرات يوميا

In severe Cases :
R / Hostacortin Tab.
قرص ٣ مرات يوميا لمدة ٥ أيام ثم قرص مرتين يوميا ثم قرص مرة واحدة يوميا

R/ glucose 25 % transfusion (as supplementary treatment)

N.B. a tracheostomy شق حنجرة (a breathing tube surgically inserted in the windpipe) is necessary if the patient has laryngeal obstruction .
- Mechanical respirator تنفس صناعى

Immunization schedule for Normal , healthy infants and children

Age	***Vaccine***
2months	-DTP (diphtheria /tetanus /pertusis) & OPV (oral polio virus)
4 months	-DTP and OPV
6 months	-DTP
15months	-MMR (measles / mumps / rubella)
18months	-DTP and OPV
2 years	-Hib (Haemophilus B conjugate vaccine)
4-6 years	-DTP and OPV (before entering the school)
14-16 years or more	-Td (adult tetanus toxoid and diphtheria) given as a booster shot every10 years to children over 12 years old and to adults .

Shingles (Herpes Zoster)

Shingles, or herpes zoster, is a common viral infection of the nerves, which results in a painful rash of small blisters on an area of skin anywhere on the body. Even after the rash is gone, the pain can continue for months and sometimes years.

Shingles is caused by the varicella-zoster virus, which is the same virus that causes chickenpox. After a person has had chickenpox, the virus lies dormant in certain nerves for many years. Advancing age and/or a

lowered immune system seem to be the main causes of shingles.

Symptoms :

- Pain + Unilateral grouped vesicles with erythematous base along a sensory nerve .
  - Vesicles → crusts , if secondary infected → pustules ± post-herpetic neuralgia .
  - Occur on face & trunk .
  - Gastrointestinal upset , feeling ill , fever , headache .

Treatment :

. راحة تامة -
. كمادات ثلج على الأماكن المصابة من الجلد -

R / **Ponstan Cap.**
كبسولة بعد الأكل ٣ مرات يوميا
R / **Calamyl lotion .**
سأسأة على أماكن الإصابة ٣ مرات يوميا
R / **Tegretol 200mg. tab.**
نصف-قرص ٣ مرات يوميا
R / **Neurontin 300 mg. cap.**
كبسولة واحدة يوميا تزداد بالتدريج إلى ٣-٦ كبسولات يوميا

N.B. Surgery to remove an affected nerve (in cases of severe pain that cannot be relieved with medication) .

Scarlet fever
الحمى القرمزية

A disease caused by an infection with A B-hemolytic bacteria .

Symptoms :

- Sore throat .
- Fever .
- Vomiting .
- Rash on neck and chest .

• Small red macules that become elevate

• Fading in about 3 days to leave a rough (sandpaper) feel to the Skin .

- Peeling (desquamation) of the finger tips , toes , and groin .
- Swollen , red tongue (strawberry tongue) .
- Chills .
- Headache .
- Generalized discomfort .

Treatment :

-Complete bed rest .
– light meals .

Antibiotic :
R/ **Ospen 400 syrup** .
Or: **flumox syrup .**
Or: **Erythrocin syrup** .
Or: **Biomox syrup .**
ملعقة كل ٨ ساعات

For fever :
R/ **Abimol syrup.**
Or: **Brufen syrup .**
Or: **Novacid syrup .**
ملعقة ٣ مرات يوميا

Poliomyelitis
(Infantile paralysis)

Definition : Poliomyelitis is a disorder caused by a viral infection. The virus, known as poliovirus, infects nerves. This infection can lead to temporary paralysis or, in more severe cases, permanent paralysis or death.

Causes, incidence, and risk factors

Poliomyelitis is a communicable disease caused by infection with the poliovirus. Transmission of the virus occurs by direct person-to-person contact, by contact with infected secretions from the nose or mouth, or by contact with infected feces.

The virus enters through the mouth and nose, multiplies in the throat and intestinal tract, and then is absorbed and spread through the blood and lymph system. Incubation (the time from being infected with the virus to developing symptoms of disease) ranges from 5 to 35 days (average 7 to 14 days).

Risks include:

- Travel to an area that has experienced a polio outbreak
- Lack of immunization against polio and subsequent exposure to a case of polio

In areas that had an outbreak, the more susceptible populations include children, pregnant women, and the elderly.

Symptoms

There are three basic patterns of polio infection: subclinical infections, nonparalytic, and paralytic. Approximately 95% of infections are subclinical infections, which may go unnoticed.

Clinical poliomyelitis affects the central nervous system (brain and spinal cord), and is divided into nonparalytic and paralytic forms. It may occur after recovery from a subclinical infection.

Subclinical infection

- No symptoms, or symptoms lasting 72 hours or less
- Slight fever
- Headache
- General discomfort or uneasiness (malaise)
- Sore throat
- Red throat
- Vomiting

Nonparalytic Poliomyelitis

- Symptoms last 1 to 2 weeks
- Moderate fever
- Headache
- Vomiting
- Diarrhea
- Excessive tiredness, fatigue
- Irritability
- Pain or stiffness of the back, arms, legs, abdomen
- Muscle tenderness and spasm in any area of the body
- Neck pain and stiffness
- Pain front part of neck
- Back pain or backache
- Leg pain (calf muscles)
- Skin rash or lesio with pain
- Muscle stiffness

Paralytic Poliomyelitis

- Fever, occurring 5 to 7 days before other symptoms
- Headache
- Stiff neck and back

- Muscle weakness, asymmetrical (only on one side or worse on one side)
    - Rapid onset
    - Progresses to paralysis
    - Location depends on where the spinal cord is affected
- Abnormal sensations (but not loss of sensation) of an area
- Sensitivity to touch, mild touch may be painful
- Difficulty beginning to urinate
- Constipation
- Bloated feeling of abdomen
- Swallowing difficulty
- Muscle pain
- Muscle contractions or muscle spasms, particularly in the calf, neck, or back
- Drooling
- Breathing difficulty
- Irritability or poor temper control
- Positive Babinski's reflex

Signs and tests

Examination may shows signs of meningeal irritation (similar to meningitis), such as stiff neck or back stiffness with difficulty bending إنحناء the neck. When sitting, the person may need to support the body with their arms.

The person may have difficulty lifting the head or lifting رفع the legs when lying flat on the back. Reflexes may be abnormal. The disorder may resemble encephalitis, and it may affect the cranial nerves and cause difficulty with facial expression, swallowing, chewing, and so on. It may also cause choking إختناق or difficulty breathing.

Viral cultures of throat washings, stools, or cerebrospinal fluid (CSF) confirm the diagnosis. Routine CSF examination may be normal or show slight increase in pressure, protein, and white blood cells. Another way to make the diagnosis is to test for a rise in levels of the antibodies to the polio virus.

Treatment :

Acute stage :

- Rest in bed . راحة بالسرير

- Splints to prevent deformities . جبائر لمنع التشوهات

- Aspirin for pain .

R/ Aspocid tab.

Or : Alexoprine tab. قرص عند اللزوم

- No physiotherapy except after : يبدأ العلاج الطبيعى بعد

1- Disappearance of fever . إنخفاض درجة الحرارة

2- Disappearance of muscle pain . و إختفاء ألم العضلات

-During Convalscence : Light massage , passive movments then graduated active movements , but avoid fatigue . تدليك خفيف و تحريك الأطراف دون إرهاقها

- Exercises in a warm bath . تمرينات فى حمام دافيء

In complications :

- Paralysis of the bladder :

1- Suprapubic pressure . الضغط فوق العانة

2- Foley's catheter . تثبيت قسطرة (فولى)

- Pharyngeal & / or respiratory paralysis :

1- Tilting the patient & suction . يوضع المريض نصف جالس و تشفط الافرازات

2- Ryle's tube & milk feeding .

التغذية باللبن عن طريق أنبوبة رايل

3-Tracheotomy & positive pressure respiration .

شق حنجرة و تنفس صناعى

N.B) avoid injections تجنب الحقن

Chronic stage :

- Physiotherapy (massage + exercises) .

علاج طبيعى (تدليك + تمرينات)

- Surgical correction of deformities .

تصحيح التشوهات جراحيا

Prophylaxis : Sabin living attenuated viral vaccine :

1- P.O.P.V : Trivalent oral polio vaccine given at 2,4,6 months .
2- Booster dose at 1.5 years & at shool age 4-6 years .

Rickettsial diseases

Typhus Fever=louse-borne typhus (Epidemic typhus)

Typhus rickettsia are transimitted between hosts by arthropods , the incubation period is 2-23 day .

Diagnosis :

-sudden onset of fever , frontal headache , malaise , confusion .

- A rickettsial rash is seen on the 4^{th}-7^{th} day appears as maculo-papular rash on the trunk & in the axillae , spreading to the rest of the body , sparing the face , palms & soles .

-It is endemic in Egypt .

Prevention :

-Louse control with DDT . التخلص من القمل بال د.د.ت

- Bathing & general hygine .

-immunization by Inactivated Cox vaccine (0.5 ml . IM , repeated after 4-6 weeks)

Treatment :

Doxycycline or tetracycline or chloramphenicol .

R/ **Cidocetine cap.**

Or : **Tetracid cap .**

Or : **Miphenicol 250 cap.**

Or : **Oxytetracid 250 cap.**

٢كبسولة كل ٦ ساعات لمدة ٤-١٠ أيام

R/ **Vibramycin 100 mg cap.**

Or : **Farcodoxin 100 mg. cap.**

Or : **Tolexine 100 cap.**

كبسولة كل ١٢ ساعة

R/ **Voltaren amp.**

أمبول بالعضل عند إرتفاع درجة الحرارة

the patient & his clothes are disinfected with DDT powder .

N.B

1. Epidemic typhus carried by human lice , whose faeces are inhaled or pass through skin .
2. Endemic typhus (murine) is transmitted by fleas from rats to human . It is more prevalent in warm , coastal ports . Treatment is the same as epidemic typhus .
3. scrub typhus (R. orienta tsutsugamushi) most common in south-eastern of Asia & treated as epidemic typhus .
4. Rocky Mountain spotted fever is tick-borne and endemic in the Rocky Mountain and the south-eastern of the USA . the rash begins as macules on the hands and feet and then spreads becoming petechial or haemorrhagic .
5. Tick typhus (R.conorii) the commonest imported rickettsial disease in the UK

(endemic in africa , the arabian gulf , and mediterranean) . a black eschar may be visible at the site of the infecting bite . the rash starts in the axillae , becoming purpuric as it spreads . other conjunctival suffusion ; jaundice , deranged clotting , renal impairment .

Typhoid fever (Enteric fever)
حمى التيفود

1- headache , cough , weakness , fatigue , sore throat with relative bradycardia .
2- vomiting , constipation or diarrhea , splenomegaly, and abdominal pain are often present .
3- Second stage : continous fever , Diarrhea (pea soup) .
4- In severe cases : the person may fall into (the typhoid state) lying motionless with eyes half-closed appearing wasted and exhuasted .
5- Rose spot on the trunk .

Complications :

1-intestinal bleeding manifested by a sudden decrease in blood pressure , increase in pulse , rigidity , and abdominal pain .
2- perforation of the intestine .
3-pneumonia , meningitis and infection of tha bladder , kidney .

Tests :

+ve Blood culture , urine /stool culture
+ve Widal agglutination test .

Prevention :

R/ **Typhoid vaccine** . (0.5 cc. S.C. , to be repeated after 4 weeks)
N.B. يوضع حاملو المرض تحت الملاحظة و يمنعون من طهى الطعام أو حمله .

Treatment :

يعزل المريض و يتم تعقيم الأغطية و الملابس

In Acute attack :

1-first choice drug :

<u>1- Co-trimoxazole :</u>
R/ **Septazole tab.**
Or : **sutrim tab.**
قرصان كل ١٢ ساعة لمدة أسبوعين

<u>2- Cefatriaxone or cefoperazone</u> .
R/ **Rocephin 1gm. vial**
Or : **Cefazone 1gm. vial** .
2 gm once aday .

<u>3- Ciprofloxacin</u> (because the bacteria present in the urine & stool)
R/ **Ciprofloxacin 500 tab.**
قرص كل ١٢ ساعة لمدة أسبوعين

2-Second choice drug (frequent resistance) :

Ampicillin or Amoxycillin
R/ **Ampicillin 250 cap.**
٢ كبسولة كل ٤ ساعات حتى تنخفض درجة الحرارة ثم ٢ كبسولة كل ٦ ساعات لمدة أسبوع

3-third choice drug ; (more frequent resistance & toxicity) :

Chloramphenicol
R/ **Miphenicol 250 mg cap.**
Or : **Cidocetine 250 mg cap.**
Or : **thiophenicol 250 mh tab.**
البالغون : ٤ كبسولات كل ٦ ساعات حتى تنخفض درجة الحرارة ثم ٢ كبسولة كل ٦ ساعات لمدة أسبوع الأطفال : ٥٠ مجم لكل كجم يوميا

+ R/ **Novalgin supp. Or syrup.**

Or :paramol syrup. Or tab.
لبوسة بالشرج أو ملعقة صغيرة أو قرص بالفم ٣ مرات يوميا

+ R/ Beco-forte tab.
Or : Becozyme tab.
قرص ٣ مرات يوميا

+ R/ Hostacorten tab.
قرص ٣ مرات يوميا لمدة ٣ أيام ثم قرص مرتين يوميا لمدة ٣ أيام ثم قرص مرة واحدة يوميا

N.B.

- نقل دم فى حالات النزيف .
- جراحة عاجلة فى حالات ثقوب الأمعاء .
- معالجة الصدمة .
- راحة تامة بالسرير لمدة ٣ أسابيع .
- تناول وجبات غنية بالسعرات الحرارية و قليلة النفايات مثل :
السوائل – شربة خضار – لبن – بيض نصف مسلوق – عسل – جيلى – عصير جريب – فراخ أو أرانب مفرومة – زبدة

Treatment of carries :

1-Ampicillin or Amoxycillin .
2- Co-trimoxazole or Rifampicin .

R/ Ampicillin 500 cap.
Or : Amoxil 500 cap.
٢ كبسولة كل ٦ ساعات لمدة اسبوع

R/ Sutrim tab.
Or : Septazole tab.
قرصان كل ١٢ ساعة لمدة أسبوعين

- Cholecystectomy إستئصال المرارة إذا لزم الأمر

Treatment of Relapses : the same as acute cases .

Bacillary dysentry (Shigellosis) الدوسنتاريا الباسيلية

-Abdominal pain and diarrhea often with blood & mucous .
- cramps , malaise ± sudden fever .
- stool : positive for shigella bacilli & pus .

Treatment :

Replace fluid and electrolyte loss orally and / or intravenously .
الغذاء : سوائل – شربة خضار – أرز مسلوق

R/ Ciprofloxacin 500 Tab.
Or : Kiroll 200 tab.
Or : Ofloxacin 200 Tab.
قرص كل ١٢ ساعة لمدة ٣-٥ أيام

R/ Septrin DS tab.
قرص كل ١٢ ساعة
Or :Septazole tab.
Or : Sutrim tab. قرصان كل ١٢ ساعة

R/ streptoquin tab.
Or : Entocid tab. قرص ٣ مرات يوميا

R/ Immodium cap.
كبسولتان فى البداية ثم كبسولة بعد كل مرة إسهال .

Some doctors prefer to avoid antidiarrhael drugs like immodium in bacillary dysentry .

Cholera الكوليرا

1. Severe painless diarrhea (Rice-water stools) .
2. Vomiting , dehydration , hypotension , thirst , dry cold skin ± Semi-coma or coma , anuria & may end in death + detection of vibrio in stools .

Prevention :

- يعزل المريض و يتم التخلص من البراز بالطريقة الصحية .
- يغلى الماء و يطهى الطعام جيدا فى المناطق الموبوءة .

R/ Cholera vaccine .

٠,٥سم٣ تحت الجلد أو بالعضل ، ثم ١ سم٣ بعد ٤ أسابيع ، ثم ٠,٥ سم٣ كل ٤-٦ أشهر عند توقع حدوث وباء .

Treatment :

In Mild & Moderate Cases :

R/ Na Cl 4.2 gm./ L. + Na HCO3 4 gm/ L + KCl 1.8 gm./ L + Glucose 21.6 gm./ L .

يعطى المحلول عن طريق الفم بكميات مكافئة للسوائل المفقودة

Severe cases :

R/ NaCL 5 gm/ L + NaHCO3 4 gm/L + KCL 1 gm / L

يعطى المحلول بالوريد بمعدل ١-٢ لتر على مدى نصف ساعة أولا ثم يعطى المحلول بعد ذلك لتعويض السوائل المفقودة عن طريق القيء و البراز .

R/ Tetracid Cap.

كبسولة كل ٦ ساعات لمدة ٥ أيام 2

R/ Hostacycline 500 Tab.

قرص كل ٦ ساعات لمدة ٥ أيام

N.B. Whenever you suspect a case of cholera , you should isolate the Pt. & inform the nearst health office to take the suitable measures .

Malaria الملاريا

1. Non-specific flu-like prodrome : Headache , malaise , myalgia , and anorexia .
2. followed by fever and chills ± Faints .
3. Anaemia , Jaundice and hepatosplenomegaly .
4. Thick or thin film of blood film show characteristic parasites in erythrocytes .

Treatment :

A- prophylaxis in endemic areas :

Start 2 week before going to & Continue 8 weeks After leaving the endemic area .

R/Daraprim{Pyrimethamine(first choice)}25 mg tab.

قرص أسبوعيا قبل الذهاب للمنطقة الموبوءة بأسبوعين و لمدة ٨ أسابيع بعد مغادرة المنطقة الموبوءة

OR/Chloroquine{Chloroquine Phosphate}250 mg tab.

Or : Alexoquine tab.

Or : Dagrinol tab.

٢ قرص أسبوعيا قبل الذهاب للمنطقة الموبوءة بأسبوعين و لمدة ٨ أسابيع بعد مغادرة المنطقة الموبوءة

B-therapeutic Treatment :

Chloroquine phosphate Orally (First choice) :

R/ Chloroquine 250 mg tab.

Or : Dagrinol tab.

Or : Alexoquine tab.

٤ أقراص أولا ثم ٢ قرص كل ٦ ساعات ثم ٢ قرص يوميا لمدة يومين

In severe cases :

R/ Dagrinol 250 mg 5ml amp.

Or : Chloroquine phosphate Amp.

أمبول واحد بالعضل ، يكرر بعد ٦ ساعات ، ثم تستخدم الأقراص

Cases resistant to chloroquine :

1- Acute attacks ; Quinine or Mefloquine , with either ;

a- tetracycline : Doxycycline or minocycline .

b- Co-trimoxazole : Trimethoprim + sulphamethoxazole .

C- Fansidar : pyrimethamine + sulphadoxine .

R/ Quinine sulfate .

مجم ٣ مرات يوميا لمدة أسبوعين 650

Or : fansidar tab.

٣أقراص جرعة واحدة

R/ Hostacycline Tab .

قرص كل ٦ ساعات لمدة أسبوع

In comatose patients with cerebral odema :

R/ **Decadron amp.**

Or : **Fortacortin amp.**

٤-١٠ مجم بالوريد كل ٨ ساعات

R/ **Dextran 70**

بالوريد بالنقطة كل ١٢ ساعة

NB.

- نقل دم فى حالات الانيميا الشديدة .
- غسيل كلوى فى حالات الفشل الكلوى .

Amoebiasis

Recurrent attacks of diarrhea with blood , mucous .
Stool is semisolid & offensive & contains E.histolytica.
Stool examination : Trophozoites (E.histolytica) , blood & pus .

Choice of Anti-amebic drugs

A)Asymptomatic intestinal infection(cyst carrier): Orally
1- Diloxanide Or 2- Diodoquin .

B) Mild to moderate intestinal (Non-dysentric) Colitis : Orally .

1- Metronidazole + Diloxanide Or Diodoquin .
2- Tetracycline + Chloroquine po4 + Diloxanide Or Diodoquin .

C) Severe intestinal (Dysentric) Colitis .

1- 1-metronidazole (I.V. then oral) + Diloxanide Or Diodoquin .
2- Emetine Hcl or dehydroemetine (I.M. Or S.C.) Then Oral teracylcine + chloroquine po4 + Diloxanide OR diodoquin >.

D) Hepatic amebiasis :

1- Metronidazole (oral or parenteral) + Chloroquine po4 + Diloxanide OR Diodoquin .
2- Emetine HCL Or dehydroemetine (I.M.) + Chloroquine po4 + Diloxanide OR Diodoquin .

N.B.) metronidazole active against vegetative amoebea But diloxanide destroy gut systs .

Treatment :

Severe Amoebic dysentry :

R/ **Flagyl tab.**

Or : **flagicure tab.**

٢قرص ٣ مرات يوميا لمدة ١٠ أيام

OR / **Fasigyn tab.**

Or : **Protozole tab.**

٤أقراص جرعة واحدة يوميا لمدة ٣ أيام

OR : **Flagyl infusion 100 ml vials** .

R/ **Tetracid cap** . (antibiotic amebicides) .

كبسولة كل ٦ ساعات لمدة ١٠ أيام

Or : **Hostacycline Tab.**

قرص كل ١٢ ساعة لمدة ١٠ أيام

R/ **Entocid tab.**

Or : **furamide (diloxanide) tab.**

قرص بعد الأكل ٣ مرات يوميا

Carrier state :

R/ **furamide tab.**

Or : **Amoebyl (diloxanide) tab.**

Or : **Furamibe forte (metronidazole + Diloxanide) tab.**

Or : **Furazol tab.**

Or : **Dilozole tab.**

قرص ٣ مرات يوميا لمدة ١٠ أيام

Amoebic liver abscess : is usually a single mass in the right lobe , and contains (anchovy-sauce) pus . there is usually a high swinging fever , sweats and tenderness .

R/ **Flagyl infusion 100 ml vials** .
100ml / 6 hours
Or : **Elyzol infusion 100 ml vials** .
100ml / 6 hours
Or : **Fasygin tab.** As before
Or : **Dilozole tab.** As before
N.B. Surgical Aspiration if no improvement within 72 hours of starting metronidazole .

Toxoplasmosis

Toxoplasmosis is a disease due to contact with the parasite Toxoplasma gondii . It is contracted by eating poorly cooked infected meat or through contact with infected cat feces , or it can be passed from an infected pregnant mother to her baby . a small percentage of infants infected from mother die from this disease . The protozoa toxoplasma gondii can infect lymphatic tissue , brain , eyes , muscle , heart and lungs .

Diagnosis : (difficult to be diagnosed) .

- Fatigue, muscle pain , flu like symptoms
- Mental retardation , Neurological & vision problems where it may cause blindness in infants infected from mother (congenital blindness)

In adult : Meningoencephalitis , lymphadenopathy & hepatosplenomegaly .
some women have no symptoms .

Tests :

1. The toxoplasma dye test was the first serological test used .
2. 4-fold rise in antibody titre
3. Lymph node or CNS biopsy may be diagnostic .
4. Cerebral CT may show characteristic multiple ring-shaped contrast –enhancing lesions .

Congenital Toxoplasmosis : may cause abortion , neonatal fits , choroidoretinitis , hydrocephalus , microcephaly , or cerebral calcification .

Treatment :

R/ **Daraprim (pyrimethamine) 25 mg tab.**
25-50 mg / 8 hr per oral for 5 days , then 25-50 mg / 24 hours per oral 4 weeks .
R/ **Sulfadiazine tab.**
قرص كل ٦ ساعات لمدة ٣-٦ أسابيع
In pregnancy :
R/ **Rovac 3 tab.** قرص كل ١٢ ساعة
R/ **Deltason tab.**

Rabies السعار

Is caused by a virus that affects the brain . it is transmitted to humans by saliva from the bite of an infected animal . dogs and cats may be infected , and many bats , skunks , and foxes are infected . the

incubation period from the time of bite untilsymptoms appear is usually 3 to 7 days but can range from 10 days to 2 years .

Diagnosis :

1-Pain followed by tingling at the site of an animal bite.
2-Skin sensitivity .
3-Excessive drooling of saliva .
4-Inability to swallow liquids .
5-Rage alternating with calm .
6-Finally , Convulsions and paralysis leading to death .

N.B. Rabies is almost always fatal . Death due to heart Or respiratory failure and paralysis usually occurs within 7 to 25 days after symptoms appear .

Treatment :

ينظف الجرح بالماء و الصابون و يغسل بماء الأكسجين او الكحول .

R/ Rabies Vaccine vials .(5 vials)

يحقن فورا و فى أسرع وقت عضل أو تحت الجلد ، وحقنةفى اليوم الثالث ، و حقنة أخرى فى اليوم السابع ، وحقنة رابعة فى اليوم الرابع عشر و الأخيرة فى اليوم الثامن والعشرين .

R/ Rabies immune globulin . (passive protection)

20 وحدة لكل كجم ، يحقن نصفها عند موضع الجرح و يحقن النصف الأخر بالعضل .

Tetanus التيتانوس

Tetanus , also known as lockjaw , is caused by bacteria whose spores are found in soil . If the spores enter a deep wound beyond the reach of oxygen from the air , they germinate and produce a toxin , tetanospasmin , that interfers with the nervers controlling muscles .

The incubation period from the time of the injury untill symptoms appear is 5 days to 3 weeks (average , 8 to 12 days) .

Diagnosis :

- Stiffness of the jaw , neck , and other muscles .
- Difficulty swallowing and Irritability
- Spams of the jaw or facial muscles follow , progressing to spasms and rigidity of the neck , abdominal , and back muscles .
- Finally ,Painful convulsions caused by minor stimuli .

If muscle spasms develop early , chances of recovery are poor . Tetanus is quite serious , ofetn leading to death , especially in small children and elderly people . for this reason , prevention is the best treatment .

Prevention :

-*Active immunization* : given to children as part of the DTP shot (As in diphtheria) , with booster shots every 10 years or at the time of a major injury .

Treatment :

open and clean the wound .

1-mild cases :

R/Tetanus antitoxin U vials .

تعطى بالعضل بعدعمل إختبار حساسية

OR/ Tetanus human immunoglobulin . 500 وحدةعضل

R/ Valium amp.
Or : Neurazine amp . أمبول عند اللزوم
R/ Vibramycin cap.
Or : Hostacycline amp.
Or : Tetracid cap
. كبسولة او قرص كل١٢ ساعة
OR / Penadur vial .
Or : Retarpen vial .
حقنة واحدة بالعضل
Or: Crystalline penicillin 1.000.000 U vial
حقنة بالعضل كل ٦ ساعات

2- Moderate cases :
As in mild cases in addition to ;
-Tracheostomy .
- Monitoring BP & Artificial respiration .
3- severe cases :
As in moderate cases in addition to ;
- Catheterization to empty the bladder .
- Pavulon (muscle-relaxant) infusion to relieve rigidty 7 spasms .
- Quiet & dark room or environment .

Meningitis

-Headache, vomiting, fever, rigors, confusions, delerium, Convulsions & Skin rash .
-Signs of meningeal irritation (photophobia , neck rigidity , opisthotones & positive kernig & Brudzinski).
-Shock & disseminated intravascular clotting .
-CT scan to determine If there is an abscess or deep swelling .
-Lumbar puncture & CSf examination : show increased tension , cells (polymorphonuclear) & protein content , with diminished sugar content (Consumed by bacteria) .
-Blood & CSF cultures & sensitivity tests are needed .

N.B The commonest causative organisms are :
In Neonates :
E Coli
Group B strepto-cocci
In children < 14 years :
H.influenza if < 4 years and unvaccinated
Meningococcus (N.meningitids)
Streptococcus pneumoniae
TB (endemic areas)
In Adults and older children :
Meningococcus
Pneumococcus (strep.peumoniae)
In Elderly and immunocompromised :
Pneumococcus
L.monocytogenes
TB
Gram-negative organisms
Cryptococcus

	Pyogenic Meningitis	T.B. Meningitis	Viral (aspetic) Meningitis	Normal values
Cells/mm	↑ to 500-3000 more. Mainly lymphocytes	↑ to 50-500 mainly lymphocytes	↑ to 50-500 mainly lymphocytes	0-5 mononuclear cell/mm
Protein	↑↑	↑	Normal or ↑	20-40mg %
Sugar	< ½ blood sugar	↓	Normal	40-80mg %
Chloride	Nromal	↓	Nromal	690-720mg %

A. Antibiotic therapy :

(1) Initial antibiotic therapy of bacterial meningitis until the result of CSF culture is available :

Clinical situation	**Drug of choice**	***Alternative***
Neonates	Ampicillin & gentamicin Or Ampicillin & cefatriaxone	*Vancomycin & gentamicin*
Infants & children	Ampicillin & chloramphenicol or ceftriaxone	*Erythromycin & chloramphenicol*
Adult	*Ampicillin & ceftriaxone*	*Erythromycin & chloramphenicol*

(2) Choice of Antibiotic therapy of known Etiology on the basis of culture & sensitivity testing .

Organism	**Drug of choice**	***Alternative (for Pts. allergic to penicillin)***
	Gram –positive organisms	
Streptococcus pneumoniae (pneumococcus .	Ceftriaxone + vancomycin	*Ceftriaxone + Rifampicin Erythromycin*
Streptococcus , groups A & B	Penicillin G	*Erythromycin*
Streptococcus , group D (enterococcus)	Penicillin & gentamicin	*Vancomycin & Gentamicin*
Staphylococcus		*Vancomycin Penicillin G*
Listeria monocytogenes	Ampicillin	*Trimethoprim-Sulfamethoxazole Chloramphenicol*

Gram-negative organisms		
Meningococcus	*Penicillin G*	*Third –generation cephalospsorin Chloramphenicol*
Haemophilus influenza	*Ampicillin or third-generation cephalosporin*	*Chloramphenicol*
Enteric gram-negative rods (Escherichia coli , proteus species , klebsiella species)	*Third-generation cephalosporin or ticarcillin + gentamicin*	*Gentamicin*
Pseudomonas aeruginosa	*Ticarcillin (or cefatazidime) + gentamicin*	*Gentamicin*

- Antibiotic therapy should continue for 10 to 14 days & the CSF glucose should return to normal .

Gentamicin as :

R/ **Garamycin 80 mg amp.**

البالغين : أمبول عضل كل ٨ ساعات

Garamycin 20 mg amp.

الأطفال و الرضع : ٢مجم / كجم / ٨ ساعات عضل

Chloramphenicol as :

R/ **Cidocetine 250 cap.**

Or : **Mephenicol 250 cap.**

البالغين : ٢٥-٥٠ مجم لكل كيلو جرام من وزن الجسم أى حوالى ٨-١٢ كبسولة مقسمة على فترات كل ٤ أو ٦ ساعات يوميا

R/ **Cidocetine syrup.**

Or : **Miphenicol syrup.**

للأطفال الرضع : حتى سن سنة واحدة : ملعقة صغيرة كل ٤ أو ٦ ساعات يوميا .

للأطفال أكبر من سن سنة : ١-٢ ملعقة صغيرة كل ٤ أو ٦ ساعات يوميا

OR/ **Cidocetine Or miphenicol 125 , 250 & 500 supp.**

للأطفال الرضع : قمع واحد (١٢٥ مجم) كل ٦ أو ٨ ساعات يوميا

للأطفال الكبار : قمع واحد (٢٥٠ مجم) كل ٤ أو ٦ ساعات يوميا

للبالغين : قمع واحد (٥٠٠ مجم) كل ٣ أو ٤ ساعات يوميا

OR/ **Cidocetine 1 gm vial .**

الأطفال : ٢٥ مجم / كجم / ٦ ساعات بالوريد –

البالغين : حقنة بالوريد كل ٦ ساعات

Cefotriaxone Or third generation cephalosprins as :

R/ **Rocephin 1 gm vials . 4 gm once a day .**

Trimethoprim-Sulfamethoxazole as :

R/ **Sutrim tab.**

Or : **septazol tab.**

Or : **Septrin syrup.**

٢ قرص أو ملعقة كل ١٢ ساعة

B. Supportive therapy :

1- Dehydration therapy :(for cerebral edema , papilledema & coma)

R / **Mannitol 25 %**

٥٠٠ سم٣ بالوريد على مدى ١٥-٢٠ دقيقة

OR/ **Epidron vial**

٨ مجم بالوريد كل ٦ ساعات

2- Fever :

R/ **Vegaskine adult or inf. Supp.**

لبوسة صباحا و مساءا

3- Convulsions :

R/ Neuril Amp .

البالغين : أمبول بالوريد عضل عند اللزوم –
الأطفال: ٢٥، ٠ مجم / كجم عند اللزوم

Prophylaxis of patient contacts :

R/ Rifampicin 300mg cap.
Or : Rifadin 300 mg Cap.
البالغين : ٢ كبسولة قبل الأكل كل ١٢ ساعة لمدة يومين
الأطفال : ١٠ مجم لكل كجم كل ١٢ ساعة لمدة يومين

Gas gangrene الغرغرينة

Gangrene is death of the tissue . Gas gangrene results when a wound becomes infected by certain bacteria , usually clostridium .

Diagnosis :

1-Symptoms : This infection causes :

- sudden pain and swelling around the wound , a moderate increase in temperature , a decrease in blood pressure , and a rapid heartbeat .
- skin around the wound becomes pale due to fluid that builds up .
- A watery , foul-smelling , brownish-red fluid is released later .
- The tissue changes from pale to dusky to highly discolored as the infection worsens .

Left untreated , stupor , delerium , coma , and death result .
2-Gas in the tissue palpated or seen in X-ray .
3-Make cultures .

Treatment :

R/ gas gangrene antitoxin 20000 U. Or 25000 U. Amp
٢٠-٢٥ألف وحدة بالوريد كل ٦-٨ساعات بعد إجراء إختبار للحساسية

R/Crystalline penicillin 1000000 U. vials . حقنة بالعضل كل ٣ ساعات
+ Hyperbaric O2
+ Remove all dead tissue (e.g amputation) .

Prevention :

- Care of feet of diabetic patient .
- Even minor injuries must be treated with special attention .
- Avoid causes of ischemia .

Hepatitis

Hepatitis is a gastroenterological disease, featuring inflammation of the liver.

Signs & Symptoms :

Hepatitis is an inflammation of the liver characterized by :
malaise, joint aches, abdominal pain, vomiting 2-3 times per day for the first 5 days, defecation, loss of appetite, dark urine, fever, hepatomegaly (enlarged liver) and jaundice (icterus, yellowing of the eyes and skin).
✎ the replacement of liver cells by connective tissue; this disease process is referred to as cirrhosis of

the liver. Certain liver function tests can also indicate hepatitis.

Types of hepatitis :

A- Viral

Most cases of acute hepatitis are due to viral infections:

1- Hepatitis A
2- Hepatitis B
3- Hepatitis C
4- Hepatitis B with D
5- Hepatitis E
6- Hepatitis G

✎ note hepatitis viruses are not all related. Other viruses can also cause hepatitis, including cytomegalovirus, Epstein-Barr virus, etc.

Hepatitis A

Hepatitis A or infectious jaundice is caused by a picornovirus. It is transmitted by the orofecal route, transmitted to humans through methods such as contaminated food. It causes an acute form of hepatitis and does not have a chronic stage. The patient's immune system makes antibodies against hepatitis A that confer immunity against future infection.
✎ People with hepatitis A are advised to rest, stay hydrated and avoid alcohol.
✎A vaccine is available that will prevent infection from hepatitis A for life. Hepatitis A can be spread through personal contact, consumption of raw sea food or drinking contaminated water. This occurs primarily in third world countries .
✎ Strict personal hygiene and the avoidance of raw and unpeeled foods can help prevent an infection.
✎ Infected persons already begin excreting the hepatitis A virus with their stool two weeks after the appearance of the first symptoms.
✎The time between the infection and the start of the illness

Hepatitis B

Hepatitis B is caused by a hepadnavirus, which can cause both acute and chronic hepatitis. Chronic hepatitis develops in the 15% of patients who are unable to eliminate the virus after an initial infection.
✎ Identified methods of transmission include blood (blood transfusion, now rare), tattoos (both amateur and professionally done), sexually (through sexual intercourse or through contact with blood or bodily fluids سوائل الجسم), or in utero (from mother to her unborn child, as the virus can cross the placenta).
✎ Blood contact can occur by sharing syringes in intravenous drug use, shaving accessories such as razor blades, or touching wounds on infected persons.

✎ Patients with chronic hepatitis B have antibodies against hepatitis B, but these antibodies are not enough to clear the infection that establishes itself in the DNA of the affected liver cells.
✎ Hepatitis B infections result in 500,000 to 1,200,000 deaths per year worldwide due to the complications of

There are three, FDA-approved treatment options available for persons with a chronic hepatitis B infection: alpha-interferon, adefovir and lamivudine. In about 45% of persons on treatment achieve a sustained response.

Hepatitis C

Hepatitis C (originally "non-A non-B hepatitis") can be transmitted through contact with blood (including through sexual contact where the two parties' blood is mixed). Hepatitis C may lead to a chronic form of hepatitis, culminating in cirrhosis. It can remain asymptomatic for 10-20 years. No vaccine is available for hepatitis C.

Patients with hepatitis C are prone to severe hepatitis if they contract either hepatitis A or B, so all hepatitis C patients should be immunized against hepatitis A and hepatitis B if they are not already immune.

However, hepatitis C itself is a very lethal virus فيروس مميت , and it can result in death, most people who have gotten hepatitis C have died ,the virus can cause cirrhosis of the liver. The virus, if detected early on can be treated by a combination of interferon and the antiviral drug ribavirin.

Hepatitis E

Hepatitis E produces symptoms similar to hepatitis A, it is more prevalent سائد in the Indian.

Hepatitis G

Another type of hepatitis, hepatitis G, has been identified, and is probably spread by blood and sexual contact. There is, however, doubt about whether it causes hepatitis, or is just associated with hepatitis, as it does not appear to be primarily replicated in the liver.

Other viruses can cause infectious hepatitis:

1- Mumps virus
2- Rubella virus
3- Cytomegalovirus
4- Epstein-Barr virus
5- Other herpes viruses

Alcoholic Hepatitis

Ethanol, mostly in alcoholic beverages, is an important cause of hepatitis. Usually alcoholic hepatitis comes after a period of increased alcohol consumption. Alcoholic hepatitis is characterized by a variable symptoms, which may include feeling unwell, enlargement of the liver, development of fluid in the abdomen ascites, and modest elevation of liver blood tests.

Alcoholic hepatitis can vary from mild with only liver test elevation to severe liver inflammation with development of jaundice, prolonged prothrombin time, and liver failure. Severe cases are characterized by either obtundation (dulled consciousness) or the combination of elevated bilirubin levels and prolonged prothrombin time; the mortality rate in both categories is 50% within 30 days of onset.

✍ Alcoholic hepatitis by itself does not lead to cirrhosis, but cirrhosis is more common in patients with long term alcohol consumption. Patients who drink alcohol to excess are also more often than others found to have hepatitis C.

Drug induced hepatitis

A large number of drugs can cause hepatitis.

1- Halothane (a specific type of anesthetic gas)
2- Methyldopa (antihypertensive)
3- Isoniazid (INH), rifampicin, and pyrazinamide (tuberculosis-specific antibiotics)
4- Phenytoin and valproic acid (antiepileptics)
5- Zidovudine (antiretroviral i.e. against AIDS)
6- Ketoconazole (antifungal)
7- Nifedipine (antihypertensive)
8- Ibuprofen and indometacin (NSAIDs)
9- Amitriptyline (antidepressant)
10- Amiodarone (antiarrhythmic)
11- Nitrofurantoin (antibiotic)
12- Hormonal contraceptives
13- Allopurinol
14- Azathioprine
15- Some herbs and nutritional supplements

✍ Hormonal contraception can cause structural changes in the liver.
✍ Amiodarone hepatitis can be untreatable since the long half life of the drug (up to 60 days) means that there is no effective way to stop exposure to the drug.
✍ Statins (hypolipidimic) can cause elevations of liver function blood tests normally without indicating an underlying hepatitis.

AIDS

Acquired immune deficiency syndrome (AIDS or Aids) is a collection of symptoms and infections resulting from the specific damage to the immune system caused by the human immunodeficiency virus (HIV). The late stage of the condition leaves individuals prone to opportunistic infections العدوى الانتهازية and tumors.

Treatments for AIDS exist to slow the virus's progression, but there is no known cure.

HIV is transmitted through direct contact of a mucous membrane or the bloodstream with a fluid

containing HIV, such as blood, semen, vaginal fluid, preseminal fluid, and breast milk. This transmission can come in the form of anal, vaginal or oral sex, blood transfusion, contaminated hypodermic needles, exchange between mother and baby during pregnancy, childbirth, or breastfeeding or other exposure to one of the above bodily جسماني fluids.

✍ AIDS is the most severe manifestation of infection with HIV. HIV is a retrovirus that primarily infects vital components of the human immune system such as $CD4^+$ T cells (a subset of T cells),

macrophages and dendritic cells. It directly and indirectly destroys $CD4^+$ T cells. $CD4^+$ T cells are required for the proper functioning of the immune system. When HIV kills $CD4^+$ T cells so that there are fewer than 200 $CD4^+$ T cells per microliter (µL) of blood, cellula immunity is lost, leading to the condition known as AIDS

Diagnosis

the World Health Organization (WHO) grouped these infections and conditions together by introducing a staging system for patients infected with HIV-1.

1- Stage I: HIV disease is asymptomatic and not categorized as AIDS

2-Stage II: includes minor mucocutaneous manifestations and recurrent upper respiratory tract infections

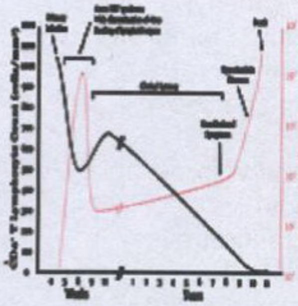
3- Stage III: includes unexplained chronic diarrhea for longer than a month, severe bacterial infections and pulmonary tuberculosis

4- Stage IV: includes toxoplasmosis of the brain, candidiasis of the esophagus, trachea, bronchi or lungs and Kaposi's sarcoma; these diseases are indicators of AIDS.

HIV test

Typical HIV tests, including the HIV enzyme immunoassay and the Western blot assay, detect HIV antibodies in serum, plasma, oral fluid, dried blood spot or urine of patients. However, the window period = (the time between initial infection and the development of detectable antibodies against the infection) can vary. This is why it can take 3–6 months to seroconvert and test positive. Commercially available tests to detect other HIV antigens, HIV-RNA, and HIV-DNA in order to detect HIV infection prior to the development of detectable antibodies are available.

Symtoms & Complications :





A generalized graph of the relationship between HIV copies (viral load) and CD4 counts over the average course of untreated HIV infection; any particular individual's disease course may vary considerably.

Major pulmonary illnesses

X-ray of *Pneumocystis pneumonia*. There is increased white (opacity) in the lower lungs on both sides, characteristic of *Pneumocystis* pneumonia

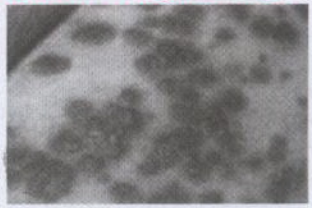
1- *Pneumocysti* pneumonia (originally known as *Pneumocystis carinii* pneumonia, common among

HIV-infected individuals., it was a common immediate cause of death. it does not generally occur unless the CD4 count is less than 200 per µL.

2- Tuberculosis (TB) is unique among infections associated with HIV
3- Major gastro-intestinal illnesses
4- Esophagitis is an inflammation of the lining of the lower end of the esophagus
5- Unexplained chronic diarrhea in HIV infection Major neurological illnesses
6- Toxoplasmosis is a disease caused by the single-celled parasite called *Toxoplasma gondii*; it usually infects the brain causing toxoplasma encephalitis
7- Progressive multifocal leukoencephalopathy (PML) is a demyelinating disease, in which the gradual destruction of the myelin sheath covering the axons of nerve cells impairs the transmission of nerve impulses. It is caused by a virus called JC virus
8- AIDS dementia الخرف complex (ADC) is a metabolic encephalopathy اعتلال دماغي induced by HIV infection manifested by cognitive, behavioral, and motor abnormalities that occur after years of HIV infection and is associated with low $CD4^+$ T cell levels and high plasma viral loads.
9- Cryptococcal meningitis is an infection of the meninx (the membrane covering the brain and spinal cord) Patients may also develop seizures and confusion.

Major HIV-associated malignancies

Kaposi's sarcoma



Patients with HIV infection have substantially increased incidence of several malignant cancers. This is primarily due to co-infection with an oncogenic DNA virus, especially Epstein-Barr virus (EBV).

10- Kaposi's sarcoma (KS) is the most common tumor in HIV-infected patients. The appearance of this tumor in young homosexual men.
11- Cervical cancer in HIV-infected women is considered AIDS-defining. It is caused by human papillomavirus (HPV).

Other opportunistic infections

AIDS patients often develop opportunistic infections that present with non-specific symptoms, especially low-grade fevers and weight loss.

Transmission & Prevention

The three main transmission routes of HIV are sexual contact, exposure to infected body fluids or tissues, and

from mother to fetus or child during perinatal period. It is possible to find HIV in the saliva tears, and urine of infected individuals, but due to the low concentration of virus in these biological liquids, the risk is negligible.

Sexual contact

The majority of HIV infections are acquired through unprotected sexual relations

Sexually transmitted infections (STI) increase the risk of HIV transmission and infection because they cause the disruption of the normal epithelial barrier by genital ulceration ns.

✎ During a sexual act, only male or female condoms can reduce the chances of infection with HIV and other STDs and the chances of becoming pregnant. The best evidence to date indicates that typical condom use reduces the risk of heterosexual HIV transmission by approximately 80% over the long-term

Treatment :

There is currently no vaccine or cure for HIV or AIDS. The only known methods of prevention are based on avoiding exposure to the virus or, failing that, an antiretroviral treatment directly after a highly significant exposure, called post-exposure prophylaxis (PEP). PEP has very unpleasant side effects including diarrhea, malaise, nausea and fatigue.

Abacavir — a nucleoside analog reverse transcriptase inhibitors (NARTIs or NRTIs)
The chemical structure of Abacavir .
Atazanavir — a protease inhibitor

Current treatment for HIV infection consists of highly active antiretroviral therapy, = HAART.

Current optimal HAART options consist of combinations (or "cocktails") consisting of at least three drugs belonging to at least two types, or "classes," of anti-retroviral agents. Typical regimens consist of two nucleoside analogue reverse transcriptase inhibitors (NARTIs or NRTIs) plus either a protease inhibitor or a non-nucleoside reverse transcriptase inhibitor (NNRTI). Because HIV disease progression in children is more rapid than in adults, and laboratory parameters are less predictive of risk for disease progression, particularly for young infants .

Antimicrobial

These are drugs used in treatment of infectious diseases whether bacterial , viral , fungal or parasitic .

β - Lactam Antibiotics

(Penicillins , Cephalosporins , Monobactams & Carbapenems)

Penicillins

Bctericidal drugs , Toxic to bacterial cell wall .

1- Benzyl penicillin (Penicillin G) : 1,000,000 I.U.

1- Natural penicillin .

2- Side effects :

a. Short duration of action = 4-6 hours .

b. Acid sensitive = Destroyed by gastric acidity = Not effective orally .

β-Lactamase (Penicillinase) Sensitive = NOT effective in β-Lactamase secreting Organisms e.g. Most of staphylococcus aureus . Narrow spectrum = NOT effective against Gram –ve Bacilli e.g. Salmonella & H. Influenza .

Uses : + Still Widely used in the following infections : G + ve infections : Non enterococcal streptococci – Most pneumococcoi – Gonococci – Meningococci – Gas gangrene – Tentanus – Diphtheria – Spirochetes

Dose : 1-5 million U / 6 hours IM or IV or IV infusion , as it is rapidly excreted in the kidneys.

Preperations :

R/ Aqua-pen vial .

R / Penicillin G Sod. Vial

2-Long Acting penicillins : (Side effects b , c & d)

1-Procaine penicillin G : 600,000 U IM / 12-24 hours .

2-Fortified procaine penicillin G :

= Penicillin G (100.000 I.U.) + Procaine penicillin (300.000 I. U) IM / Day → Quick onset + Long duration .

Used for prophylaxis against bacterial endocarditis in dental procedures .

Dose : 1-2 vial I.M daily .

R / Penicillin procaine vial .

R/Diacillin vial .

3-Benzathine penicillin G : (1.200.000 I.U.)

1.2 – 2.4 million U IM / 1-4 weeks .

+ It is the drug of choice in the treatment of syphilis and used I.M every 4 weeks to prevent recurrence of rheumatic fever .

- Its blood level during the first week is curative .

- Its blood level in the subsequent weeks is prophylactic .

R/Durapen-S vial .

OR/ Lastipen vial .

OR/ Penadur L.A. Vial .

OR/Pencid L.A vial .

OR/ Retarpen vial .

3-Acid Resistant penicillins :Orally (Side effects a,c & d) .

1-Phenoxymethyl penicillin (Penicillin V) :

- Oral penicllin , used for minor respiratory infections
- Prophylaxis against rheumatic fever and bacterial endocarditis .

R/ Ospen 1000 tab. (1.000.000 I.U.)

R/ Ospen 1500 tab. (1.500.000 I.U.)

R/ Ospen 400 susp.(400.000I.U/5ml)

R/ Cliacil Tab. (1.200.000 I.U)

4- β-Lactamase (Penicillinase) Resistant : (side effects a, b & d) :

Methicillin : used mainly to diagnose methicillin-Resistant-staph-Aureus (MRSA) infection .

5-Acid & β -Lactamase Resistant penicillins :

Effective orally in treatment of staph. Infections but weaker than pencillin G .

1- Oxacillin .
2-Cloxacillin .
3-Dicloxacillin .
4-Flucloxacillin .

6-Broad-spectrum penicillins :

-Effective against Gram +ve & -ve organisms including Gram –ve Bacilli e.g. H.Influenza , Salmonella & Shigella But Not effective against P.aerugnosa , proteus & Klebsiella .
- β-Lactamase sensitive = Not effective in most of staph. aureus infections .
-Acid resistant = effective orally .

a-Ampicillin :

-Routes of administration :- I.M – I.V. injections or Infusion – Oral .
- It is given every 4-6 hours .
- Incompletely absorbed orally & affected by food → Disturb intestinal flora .

R / **Ampicillin** 250 mg & 500 mgCap.
" 125 mg & 250 mg Susp.
" 250mg&500 mg1000 mg vial .
R / **Epicocillin** 250 mg & 500 mgCap.
" 125 mg & 250 mg Susp.
" 500 mg 1000 mg vial .
R/ **Farcocillin** 250 Vial .
R/ **Amfipen** 250 mg & 500 mg Cap.
" 125 mg & 250mgSusp.
" 500 mg 1000 mg vial .

b-Amoxycillin : similar to ampicillin But :

a- Better absorbed orally & not affected by food .
b- longer duration of action .
c- NOT effective in shigella & Salmonella enteritis
d-Administered by I.M. & and oral every 8 hours .

R/ **Hiconcil** 250 mg & 500 mg Cap.
" 125 mg & 250mgSusp.
" 100 drops .
R/ **Amoxil** 500 mg Cap.
" 125mg & 250mg Susp.
R/ **E-Mox** 500 mg Cap.
" 125 mg & 250 mg Susp.
R/ **Biomox** 250 mg & 500 mg Cap.
" 125 mg & 250 mg Susp
R/ **Ibiamox** 250 mg & 500 mg Cap.
" 125 mg & 250 mg Susp
R/ **Moxipen** 250 mg & 500 mg Cap.
" 125 mg & 250 mg Susp
R/ **Amoxicid** 250 mg & 500 mg Cap.
" 125 mg & 250 mg Susp
R/ **Ospamox** 750 mg & 1000 mg Tab.
R/ **Farconcil** 100 drops .
R/ **Flemoxin** 250 susp.
" 500 Cap.
" 100 drops .

7-Antipseudomonal Penicillins :

-Broad spectrum + effective against pseudomonas aeruginosa & proteus .
-Dose : 200-300 mg / kg / day
- they are β-Lactamase sensitive .
- Combined with aminoglycosides (Gentamicin) → Synergism & avoid resistance .

Carboxy penicillins

Effective against P.aeruginosa and indole positive proteus .

1-Carbenicillin (pyopen) IM & IV .
2-Carbenicillin indayl Orally .
3-Ticarcillin (Ticarpen) IV .

Ureidopenicillins : Stronger than carbenicillin , effective in addition against klebsiella .
1- Mezlocillin (Baypen) IV
2- Azlocillin (Azlocil) IV
3- Piperacillin (Pipril) IM & IV .

8-Reversed – Spectrum penicillins (Amidino-penicillins) :

1-Effective against Gram – ve bacteria e.g. Salmonella & shigella but not P.aeruginosa or klebsiella or H.Influenza .
2-Useful in urinary tract infection & in typhoid fever .
3-Members :
a. Mecillinam (Selexidine) IM & IV
b. Pivmecillinam (Selexid) Orally .

Penicillin Combinations

a-Amoxycillin + Flucloxacillin

R/ Flumox 250 mg & 500 mg Cap.
" 250 susp.
" 500 mg & 1000mg vial .
R/ Flucamox 250 mg & 500 mg Cap.
" 500 mg & 1000mg vial .
R/ Hiflucil Cap .
R/ Amofluxine Cap.

b-Ampicillin & Cloxacillin .

R/ Ampiclox 250 susp.
" 500 Cap.
" 500 vial .

C- Ampicillin & Sulbactam .

R/ Unasyn 1500 , 750 , 375 mg vial .
R/ Unictam 1500 , 750 , 375 mg vial .
R/ Sulbin 1500 , 750 , 375 mg vial .

D- Amoxycillin & Clavulanic acid .

R/ Augmentin 156 , 312 mg susp.
" 375,625,1000 mg tab.
" 600 , 1200 mg vial .
R/ Curam 156 , 312 mg susp.
" 625 , 1000 mg tab.
R/ Magna-biotic 156 , 312 mg susp .
R/ E-moxclav 156 , 312 mg susp.
" 375 , 625 mg tab.
R/ Hibiotic 156 , 312 mg susp.
" 375,625,1000mg tab.

N.B) β-Lactamase (Penicillinase) Inhibitors :

a. Examples : Clavulanic acid , Sulbactam & Tazobactam .
b. They are suicide substrate for the enzyme , they bind with the enzyme → Irreversible inhibition .
c. They have very week or no anti-bacterial activity .
d. They protect penicillins from inactivation by β-Lactamases secreted by some bacteria e.g. Staph aureus , H. Influenza , E.Coli , Proteus & P. Aeruginosa .
e. **preparations** :

1-Calvulanic acid + Amocillin = E-Moxclav , Augmentin orally .
2- Sulbactam + ampicillin = unasyn oral , IM & IV .

Side effects of penicillins :

1- Allergic reactions : Urticaria , angioedema & *Anaphylactic shock* (1-50'000 patients) :
a- avoid by :
- Ask for previous history .
- Dermal sensitivity test .

b- Treatment of anaphylactic shock : Adrenaline + Cortisol + Antihistamincs .

C- Never reuse penicillin again .

2-Ampicillin induces *skin rash* in 10 % of patients & in ALL patients with infective mononucleosis , leukemia & taking allopurinol .

3- *Diarrhea* due to superinfections , specially after oral ampicillin :

a- Candidia albicans → Monilial thrush & Diarrhea. Treat by nystatin .

b- Antibiotic associated (Pseudomembraneous) colitis . caused by enterotoxins produced by staph. or clostridium difficile . Treated by oral vancomycin or Metronidazole .

4- CNS irritation (seizures) may occur if LD or Intra-thecal injection of penicillin .

5- Usually we use Na+ or K+ salts of penicillin . LD of penicillin → Na+ Or K+ over load which could be dangerous in patients with renal or cardiac problems .

Cephalosporins

Broad spectrum bactericidal antibiotics , related to penicillins , but with range of activity . they are toxic to bacterial cell wall .

> All cephalosporins are NOT active against MRSA , C.difficile & Enterococci (Strept.faecalis) .

A) First Generations cephalosporins :

1. Broad spectrum : active mainly against Gram +ve organisms , including staph aureus .
   Also Gram –ve bacilli BUT NOT H.influenza ,proteus or P.aeruginosa .
2. Resistant to β-Lactamase enzyme .
3. Do not cross meanings . NOT effective in meningitis .

R/ **Velosef** (Cepharadine)
250,500,1000 mgCap.
" 250 , 125 susp.
" 250,500,1000 mg vial .

R/ **Ceporex** (Cephalexin)
250,500,1000 mg Cap.
" 250 , 125 susp.
" 500 , 1000 mg vial .

R/ **Ospexin** (Cephalexin)
1000 mg Tab.
" 125 , 250 susp .

R/ **Keflex** (Cephalexin)
500 Tab.
" 250 susp.

R/ **Duricef** (Cefadroxil)
250,500mg Cap,1000 mgTab
" 125 , 250 , 500 susp.
" 100 drops .

R/ **Biodroxil** (Cefadroxil)
500 Cap , 1000 mg Tab.
" 250 , 500 mg susp.

R/ **Ibidroxil** (Cefadroxil)
250,500Cap,1000mgTab.
" 125 , 250 susp.

R/ **Curisafe** (Cefadroxil)
500 mg Cap.
" 125 , 250 mg susp.
" 100 drops .

R/ **Longicef** (Cefadroxil)
500 mg Cap.
" 125 , 250 mg susp.

R/ **Cefatrexyl** (Cephapirin)
500 , 1000 mg Vial .

R/ **Totacef** (Cefazolin)
500 ,1000 mg vial .

B) Second generation cephalosporins :

1. 1-Broad spectrum . similar to first generation BUT LESS active against Gram + ve & MORE active against Gram –ve (Not pseudomonas) & Anaerobes (NOT B.fragilis) .
2. β-Lactamase resistant .
3. 3-Do NOT pass BBB EXCEPT cefuroxime
4. Preperations :

R/ **Zinnat** (**Cefuroxime**)
125 , 250 , 500 Tab.
" 250 ,750 ,1500 vial .
" 500 susp.

R/ **Cefzil** (**Cefprozil**)
250 , 500 Tab.
" 125 , 250 susp.

R/ **Orelox** (**Cefpodoxime**)
100 tab.
" 40 mg susp.

R/ **Cepodem** (**Cefpodoxime**)
100 tab.
" 40 mg susp.

R/ **Ceclor** (**Cefaclor**)
250 Cap, SR 375 Tab.
" 500Cap,SR500,SR750 Tab.
" 125 , 250 susp.

R/ **Bacticlor** (**Cefaclor**)
250 , 500 Cap.
" 125 , 250 susp.

R/ **Serviclor** (**Cefaclor**)
125 , 250 susp.
" 250 , 500 Cap.

R/ **Ximacef** (**Cefixime**)
200 . 400 Cap.
" 100 susp.

C) Third Generation cephalosporins: (Parenterally)

1. Broad spectrum against Gram + ve & -ve aerobes & anaerobes , Similar to second generation but LESS on Gram +ve & MORE on Gram –ve .
2. Resistant to β-Lactamase enzyme .
3. Preperations :

Cefotaxime : Hepatic . passes BBB , so useful in meningitis .

R/ **Claforan** 250 , 500 , 1000Vial .
R/ **Cefotax-T3A** 250 , 500 , 1000Vial .
R/ **Cefotax-EIPICO** 250,500,1000 Vial.
R/ **Ceforan** 500 , 1000 vail .
R/ **Foxime** 500 , 1000 vial .

Ceftazidime Effective against P.aerugenosa Effective in meningitis .

R/ **Fortum** 250 , 500, 1000 Vial .

Cefoperazone : Effective against P.aerugenosa . NOT effective in meningitis . Excreted in bile , so allowed in renal patients without readjusting the dose .

R/ **Cefobid** 500 , 1000 Vial .
R/ **Cefozon** 500 , 1000 Vial .
R/ **Cefazone** 500 , 1000 Vial .

Ceftriaxone : Long t ½ , used once / Day . Concentrated in CSF & bone . Excreted mainly in bile , so allowed in renal patients without readjusting the dose .

R/ **Rocephin** 500 , 1000 I.M.
" 500 , 1000 I.M.
R/ **Ceftriaxone** 500 , 1000 I.M.
" 500 , 1000 I.M.
R/ **Cefotrix** 250, 500,1000 I.M .
250 , 500 ,1000 I.V.

D) Fourth Generation cephalosporins : (Parentrally)

1-Similar to third generation Cefatazidime . But more resistant to β-Lactamase enzyme .
2- Example : # Cefepime
R/ Maxipime 500 , 1000 Vial .

Tetracyclines

Broad spectrum antibiotics , bacteriostatic acting by interfering or inhibiting protein synthesis .

Indications :

1-Most of Gram +ve & -ve Bacterial infections (NOT TB or Typhoid) :

a- RT & ENT infections . Drug of choice in mycoplasma pneumonia .
b- Urinary tract infections
c- Venereal diseases : Syphilis – Chncroid - Gonorrhea- Lymph granuloma inguibnal .
d-Enteritis :
- Cholera (Doxycycline) .
- Bacillary dysentery : Shigella & Salmonella .
e-Bacillary infections : Brucelosis & Tularemia .
f-Skin infections : Acne vulgaris .
g-Eye infections : Topical tetracycline .
h-Minocycline is used to eradicate meningococcal carrier .

2- Rickettsial infections : Typhus , Q-fever & Rocky mountain spotted fever .
3- Chlamydial infection : Lymphgranuloma venerium , psittacosis , inclusion conjunctivitis and Trachoma .
4- Intestinal Amebiasis .

Availabe Preperations

1-Low to moderate lipid solubility :

Tetracycline
R/ Hostacycline 250 mg Tab.
R/ Tetracycline 250 mg Cap.
R/ Tetracid 250 mg Tab.
R/ Micycline 250 mg Cap.

Oxytetracycline
R/ Oxytetracid 250 mg Cap.
R/ Oxytetracycline 250 mg Cap

2-High lipid solubility :
Doxycycline
R/ Vibramycin 100 mg Cap.
R/ Tolexine 50 , 100 mg Cap.
R/ Farcodoxin 100 mg Cap.
R/ Doxymycin 100 mg Cap.
R/ Doxy MR 100 mg Cap.
Minocycline
R/ Minocin 50 , 100 mg Tab.

Dose : 1 Cap Or Tab. / 12 hours

Side effects of tetracyclines :

1- Teeth & bone abnormalities : If tetracyclines are taken during pregnancy & Early childhood → Chelated by Ca + & deposited in newly formed teeth & bone →
a- Teeth : permanent yellow-born discoloration & Enamel dysplasia .
b- Bone : Deformity & Inhibition of growth .
C- Tetracyclines should be avoided during pregnancy , Lactation & in children up to 8 years .
2- Teratogenecity .
3-GIT irritation : Nausea , Vomiting , epigastric pain & diarrhea .

Aminoglycosides

They are bactericidal acting by Causing misreading of mRNA by the

ribosome , Leading to abnormal protein production .
Effective mainly against Gram –ve Bacilli & some Gram + ve cocci e.g. β-Lactamase producing staph. aureus .
Not Active against streptococci & anaerobes (Because aminoglycosides enter inside bacteria by O2-requiring active transport mechanism .
Toxic reactions : Ototoxicity , Nephrotoxicity , Skeletal muscle relaxation .
Contraindications : Pregnancy , Renal failure , Myasthenia .

Preperations :

Streptomycin Sulphate : (I.M injection) :

R/ Streptomycin-CID 1 gm . vial .
R/ Streptomycin-Misr 1 gm . vial .
R/ Streptomycin-Nile 1 gm . vial .
Used mainly in the treatment of tuberculosis in conjunction with other antituberculous agents .

Gentamicin :

1. Used in serious Gram –ve infections (Indole +ve proteus , P.aeruginosa , Enterobacter , Klebsiella & Serratia) and Staphylococcal Infections .
2. Severe infections : Pneumonia , UT , Osteomyelitis & Septicemia .Better add penicillins .
3. Pseudomonal infections . Add carbenicillin or Ticarcillin .
4. Enterobacter endocarditis . Add benzyl penicillin .
5. Methicillin-resistant staph. aureus .
6. Topically (Cream , ointment or solution) in burns , wounds & skin lesions .

Dose : Adult 3-5 mg / Kg / day divided 8 hourly .
Children : 5-7.5 mg / Kg /day divided 8 hourly .

R/ Refobacin 10 , 40 , 80 mg Amp.
R/Garamycin 20 , 40 , 80 mg Amp.
R/ Epigent 20 , 80 Amp.
R/ Rigaminol 20 , 40 , 80 Amp.
R/ Gentamicin 20 , 40 , 80 Amp.

Amikacin : It is used in the treatment of infections caused by gram –ve bacilli which are resistant to gentamycin and tobramycin .
Dose : Children & adult – 15 mg / Kg / day in 2 divided .
Prematures : 10 mg / kg loading dose followed by 7.5 mg / kg every 12 hours .

R/ Amikin 100 , 250 , 500 Vial .
R/ Likacin 500 .

Tobramycin : less nephrotoxic and more active against P.aeruginosa .
Dose : Adult 1-2 amps / 8 hours .
Children : ½ -1 amps / 8 hours .
R/ Nebcin 20 , 80 mg Amp .
R/ Tobcin 20 , 80 mg Amp .

Neomycin :

1-used for local use mainly .
2- Orally as intestinal antiseptic before intestinal operations , acute intestinal infections & Hepatic coma (ADD lactulose)
3- Orally in hyperlipidemia :
a- Combine with bile acids → ↓ their absorption .
b- ↓ Absorption of cholesterol .
c- ↑ Increases conversion of cholesterol into bile acids .

4- Topically on skin & mucous membranes .
5- Inhalation in chest infections .
R/ **Neomycin** 500 mg Tab.

Spectinomycin
In penicillin resistant Gonorrhea . 2 gm IM ONCE .
R/ **Togamycin** 2 gm Vial .

Macrolides

1-Erythromycin : 250-500 mg / 6 hours .
2- Azithromycin (Zithromax) : ½ in first day then ¼ gm on days 2 to 5 .
3- Clarithromycin .
4- Roxithromycin (Rulid) : 300 mg once / day an hour before meals .
5- Spiramycin (Rovamycin) : 200-300 mg twice / day *Uses of macrolides* .

Uses :
1- In corynebacterial infections e.g. Diphtheria .
2-In chlamydial infection : Respiratory , Genital & Ocular specially in neonates & Pregnanacy .
3- In pneumonia caused by Mycoplasma & Legionella.
4-In Bordetella pertussis
5-Penicillin substitute in staph. , Strept., Pneumococcal & Treponema infections in patients allergic to penicillin .
6-In rheumatic patients taking penicillin as prophylaxis prior to dental procedures to Avoid endocarditis .
7-Topically in Acne vulgaris .

Side effects :
1-Nausea , Vomiting , diarrhea & abdominal pain .
2-Over growth of non-susceptible organisms on prolonged use .
3-Mild allergic conditions : Skin rash-urticaria .

Preperations :
Erythromycin :
R/ **Eryped** susp.
R/ **Erythrocin** 250 , 500 Tab.
" 200 mg susp.
R/ **Erythromycin** 500 Tab.
" 200 susp.
R/ **Erythromycin Stearate** 250 , 500 Tab.
R/ **Erythrin** 250 , 500 Tab.
" 200 susp.

Azithromycin :
R/ **Zithromax** 250 Cap.
" 500 susp.
R/ **Aziwok** 250 cap.
" 200 susp.
R/ **Xithrone** 250 Cap.
" 500 Cap.
" 200 susp.
R/ **Zithrokan** 500 Cap.
" 200 susp.
R/ **Azrolid** 500 Tab.
R/ **Zisrocin** 500 Cap.
" 100 susp.

Roxithromycin :
R/ **Rulid** 50 , 150 , 300 tab.
R/ **Roxid** 300 tab.

Clarithromycin :
R/ **Klacid** 250 , 500 Tab.
" XL 500 (Modified release) .
" 125 , 250 mg susp.
R/ **Klarimix** 250 , 500 Tab.
" 125 susp.

Spiramycin :

- For toxoplasmosis .

R/ Rovamycin 1.5 , 3 MIU tab.
R/ Rovapex 3 MIU tab.
R/ Rovac 1.5 , 3 MIU tab.
R/ Spirex 1.5 , 3 MIU tab.
R/ Spiramycin 1.5 , 3 MIU Tab.
Dose : 3 mg two times daily .

Lincosamines

Mode of action: Bind to bacterial ribosomes to inhibit protein synthesis .

Similar ro erythromycin , preffered in :

1- Bone & teeth infections , because it is concentrated in bone & teeth .
2-Intra-abdominal anaerobic infections (Add aminoglycosides) .
3- Locally in acne vulgaris .

Adverse effects :

1- pseudomembranous colitis (C. difficle) treated by vancomycin or Metronidazole .
2-GIT disturbances .
Dose : 150-300 mg / 6 hours .

Preperations :

Clindamycin

R/ Dalacin – C 150 mg Cap.
R/ Clindam 150 , 300 mg Cap.
R/ Clindacine 150 Cap.
R/ Clinacyn 150 , 300 Cap.

Lincomycin

R/ Lincocin 300 , 600 Amp .

Chloramphenicol

Mode of action :Bacteriostatic action by inhibiting protein synthesis .

Uses :

1-Typhoid and paratyphoid fever .
2- Bacterial meningitis specially Gram –ve H.Influenza (ADD Ampicillin) .
3- Other bacterial infections : ENT , Respiratory , urinary & GIT .
4-Mixed aerobic & anaerobic infections e.g. Itra-abdominal infections .
5- Rickettsial infections : Typhus & Rocky mountain spotted fever .
6- Topically in eye and ear infections .

Side effects :

1-Hematological :

a- Reversible dose-dependant inhibition of erythropoiesis due to inhibition of mitochondrial protein synthesis .
b- Fatal aplastic anemia which is irreversible , dose independent and may be genetically determined i.e. idiosyncrasy . Incidence 1/40000 This adverse effect is LESS likely to occur with *Thiamphenicol* .

2- Gray Baby syndrome : In premature neonates , chloramphenicol is not properly metabolized → cumualtion → Toxicity → Vomiting , flaccidity , hypothermia , shock , collapse & Gray discoloration of skin .
3- GIT Upsets & Superinfection .

Available preparations :

R/ Cidocetin 250 Cap.
" 125 susp.

" 125, 250 , 500 supp
" Succinate 1000 mg Vial .
R/ Miphenicol 250 Cap.
" 125 susp.
" 125,250,500supp
" 1000 mg Vial .
R/Streptophenicol(+ streptomycin)Cap.
" susp.
R/ Streptocetin (+streptomycin) Susp .

Monobactams

1-Example :Aztreonam (Azactam) 1-2 g / 6-8 hours IM & IV .
2-β-Lactam antibiotic . Binds to PBP-3 → ↓ cell wall synthesis → Bactericidal .
3- β-Lactamase resistant .
4-Narrow spectrum . Affects mainly aerobic Gram –ve bacteria including P.aeruginosa , N.gonorrhea & h. Influenza . NOT effective against Gram +ve or anaerobes .
5-100% bioavailabity after IM. Depends on renal excretion .

Uses : Gram –ve infections specially in patients allergic to penicillins .

Adverse effects :

a-Colonization of gram +ve organisms .

b- Pseudomembranous colitis : Treated by oral Vancomycin or metronidazole .

Dose :
Children : 30-50 mg / Kg / 6-8 hours .
Adult : 0.5 -2 gm / 8-12 hours or IM .

Preperations :
R/ Azactam 500 mg & 1 gm vials .

Carbapenems

1-Example : Imipenem : ½ -1gm /6 hours . Readjust the dose in renal impairment .
2- β-Lactam antibiotic . Binds to PBP-2 → # cell wall synthesis → Bactericidal .
3-Very wide spectrum , Gram +ve & -ve and aerobes & anaerobes growing or not .
4-Inactivated by renal tubular dipeptidase enzyme → Nephrotoxic metabolite .
Cilastatin (A dipeptidase inhibitor) .
Imipenem + Cilastatin = Tienam .

Used in IV in serious hospital acquired (Noscomial) infections .

Adverse effects :

a-Allergy and partial cross-allergy with penicillins .

b- GIT disturbances .

c-Seizures .

NB) *Meropenem :* Simialr to Imipenem But

1-NOT Metabolized by dipeptidase enzyme .

2-less liable to produce seizures .

Preperations :
R/ Meronem 500 , 1000 Vial .
R/ Tienam IM 500 vial .
R/ Tienam IV 500 vial .

Vancomycin

1-Inhibits cell wall synthesis → Bactericidal .

2-Gram +ve organisms including methicillin-Resistant staph. aureus (MRSA) & C.dificil.
3-Not effective orally . used by SLOW IV infusion .
Passes BBB in meningitis .
Excreted in urine by Glomerular filtration .
Readjust the dose in renal patients .

Used :
a-IV in penicillin-Resistant staph , strep & Enterococcal infections .
b-IV prophylactic before dental operations in patients with prosthetic valves .
c-Orally in pseudomembranous colitis .

Adverse effects :
a-Ototoxic .
b-Nephrotoxic .
c-Rapid IV infusion → Histamine release → Red man syndrome .

Preperations :
R/ Vancocin CP 500 mg Vial .

Bacitracin

1-Mixture of polypeptides .
2-↓ cell wall synthesis → Bactericidal .
3-Spectrum : Gram +ve organisms .Used topically in staph aureus infections .

Adverese effects : Nephrotoxic .
Preperations :
R/ N.P.B oint .(+ Neomycin + Polymyxin) .
R/ Tribiotic spray . (+ Neomycin + Polymyxin) .
R/Polybiotic spray . (+ Neomycin + Polymyxin).

Polymixin

1-Basic polypeptide . cationic detergent → # cytoplasmic Membarne function → Leakage of macromolecules & electrolyte → Bactericidal .
2-Affects mainly Gram-ve organisms .
3-Used only locally :
a- Topically , usally accompanied with neomycin as eye drops or skin preparations .
b- Orally (Not absorbed) to sterilize the gut .

Adverse effects : Nephrotoxic .

Preperations :
R/ Terramycin Oint . (+ Oxytetracycline)
R/ Tetra Oint . (+ Oxytetracycline)
R/Polyspectran drops . (+ Neomycin + Gramicidin) .
R/ Isopto Statrol drops (+ neomycin)
R/ Statrol Oint . (+ neomycin)
R/ Oftalmotrim Drops . (+ Trimethoprim) .
R/ Neo pol drops . (+ neomycin)

Sodium fusidate (Fucidin)

1-Steroid anti-microbial .
2-inhibit protein synthesis .

3- used mainly against β-Lactamase producing Staphylococci .
4-Readily absorbed orally .
Distributed all over the body .
concentrated in Bone .

Uses :

a-orally & Iv in severe staphylococcal infections including osteomyelitis .
ADD anti-staphylococcal penicillin e.g. Flucloxacillin to avoid resistance .
b-Ointment and gel for staphylococcal skin infection & to eradicate Staphylococcal nasal carrier .

Side effects : Mild GIT upsets .

Quinolones & fluoroquinolones

Mode of action : quinolones inhibit DNA gyrase and prevent recoiling of DNA after replication which is killing to dividing cells .

Spectrum : Fluoroquinolones 60 times more potent than quinolones .
1- Active mainly against Gram –Ve organisms (Pseudomonas , H. influenza , N. gonorrhea) .
2- Less active against gram + ve organisms (Not pneumococci or Enterococci) .
3-Mycobacteria , including TB , Not M.avium .
4- Mycoplasma
5- chlamydia .

Members & uses :

A) Nalidixic acid : First generation of quinolones
Useful in prevention and treatment of urinary tract infection (UTI) , Not pseudomonal .
R/ **Nalidram tab.**

B) Oxolinic acid :
First generation of quinolones similar to Nalidexic acid .
R/ **urotrate 750 tab.**
قرص مرتين يوميا لمدة أسبوعين

C) Pipemidic acid :
Second generation similar to Nalidexic acid .
R/ **Piperam** 200 mg cap.

Third generation

1- Norfloxacin :
For upper & lower urinray tract infections .
R/ **Norbactin** 400 & 800 tab.
R/ **Epinor** 400 tab.
R/ **Noracin** 400 tab.
R/ **Spectrama** 400tab.
R/ **Conaz tab.** (+ Tinidazole)
R/ **Norfloxacin Tz** (+ Tinidazole)
الجرعة : ٤٠٠ مجم مرتين يوميا

2- Ofloxacin :
UTI , prostatitis , sexually transmitted diseases e.g. Gonorrhea but not Syphilis , and lower respiratory tract infections .
R/ **Tarivid** 200 mg tab.
R/ **Kiroll** 200 mg tab.
R/ **Ofloxacin** 200 mg tab.
R/ **Oflicin** 200 tab.
R/ **Ofloxin** 200 tab.
R/ **Tarivan** 200 tab.
Dose : 200-300 mg twice daily .

3-Ciprofloxacin
- UTI , prostatitis & sexually transmitted diseases e.g. Gonorrhea & chlamydia Not syphilis .
- Lower respiratory tract infections (Lungs & bronchial tubes) .
- GIT infections : Diarrhea , typhoid fever & intra-abdominal infections .
-Bones & joint infections .
- Skin infections .

R/ Cibrobay 250,500,750mg Tab.
R/ Rancif 250 , 500 mg Tab.
,, 200 mg IV Infusion .
R/ Serviflox 250,500,750mg Tab.
R/ Bactiflox 250 , 500 mg Tab.
R/ Ciprofloxacin 250 , 500 mg Tab.
,, 200 mg IV infusion .
R/ Ciprofar 250 , 500 , 750 tab.
R/ Ciprocin 250,500,750mg Tab.
R/ Ciprinol 250 , 500 mg Tab.
R/ Mifoxin 250 , 500 mg Tab.
Dose : Oral 250-750 mg twice daily & IV 200 mg twice daily . Half the dose when GFR < 20 ml/ min.

4-Pefloxacin :
Similar to ofloxacin .
R/ Globacin 400 mg Tab.
R/ peflacine 400 mg Tab.
,, 400 mg Amp .
R/ pelox 400 mg Tab.

Antiviral drugs

1) Inhibition of attachment to or penetration of host cells :
1- Gamma globulin → ↓ penetration : IM to prevent measles or infective hepatitis .
2-Amantadine : orally for prophylaxis of influenza A & antiparkinsonian .
R/ Adamine 100 mg Cap .
R/ Amantine 100 mg Cap.

2) Inhibition of nucleic acid synthesis :
1-Acyclovir : prodrug → Activated by viral infected cells (not normal cells) → Triphosphate → Deoxyguanosine analogue → ↓ Viral DNA polymerase .
Oral , parenteral & topical in herps simplex and varicella-zoster .
R/ Zovirax 200 , 400 Tab.
,, 400 mg / 5 ml susp.
,, 250mg/vial (I.V. infusion) .
R/ Novirus 200 , 400 mg Cap.
,, 200 mg susp.
R/ Acylovir cream .

2-Ribavirin : Purine nucleoside analogue → ↓ DNA & RNA viruses .
R/ Viracure 200 , 400 mg Cap.
R/ Virin 200 , 400 mg Tab.
R/ Ribavirin 200 Cap.
R/ Panvirin 200 cap.

3-Gancyclovir : similar to acyclovir . Used IV in life-or sight-threatening cytomegalovirus in immunocompromised patients e.g. HIV (AIDS) .
R/ Cymevene 250 cap.
,, 500 IV infusion .

4-Zidovudine : prodrug → phosphorylated → ↓Viral RNA-dependant DNA polymerase (reverse transcriptase) . Orally for AIDS . may cause granulocytopenia & anemia .
R/ Retrovir 100 mg Cap

5- Lamivudine : as zidovudine
R/ Zeffix 100 mg tab .
R/ Epivir 150 mg Tab.
R/ Lamidine 150 mg Tab.

6- Methisoprinol :
R/ Isoprinosine 500 mg Tab.
,, 250 mg susp.

Antifungal Drugs

A) Antifungal antibiotics :
1) polyene macrolide antibiotics :
Fungistatic antibiotics : They combine with ergosterol of fungal cell

membrane → Detergent-like action = formation of pores → Loss of cellular macromolecules & ions .

- Examples :

a-Nystatin : for candidiasis of the skin & mucous membrane . Dose : 1-3 tabs / day or local .

R/ **Nystatin** supp .
R/ **Mycostatin** 10000 I.U. /1 ml Drops .
R/ **Antimycot** 10000 I.U./ 1ml Drops .
R/ **Fungistatin** 10000 I.U. /1ml Drops .
R/ **Nystatin** 10000 I.U. / 1ml Drops .
R/ **Kenacomb** craem & ointemnt

b- Amphotericin B : IV , for systemic fungal infections.
R/ **Fungizone** 50 mg I.V. infusion .

2) Griseofluvin :

a-Fungistatic antibiotic , It inhibits nucleic acid synthesis .
b- Orally in superficial mycosis (dermatophytes) e.g . Ring worm of skin , hair & nail & athlete's foot .
NOT effective against Candida albicans or systemic mycosis.

R/ **Ultragrisofluvin** 125 mg Tab.
,, 125 mg susp.
R/ **Ultrafulvin** 125 mg Tab.
R/ **Fulvin** 125 mg Tab.
R/ **Griseovin** 125 susp .

B) Antifungal azoles :

Fungicidal : They combine with fatty acids of fungal cell membrane → ↓ Synthesis of ergosterols .

Examples :

1- Ketoconazole

- Topically in local fungal infections and dandruff .
- Orally for systemic & muco-cutaneous mycosis .
- ↓ Adrenal & gonadal (androgen) hormone synthesis → Gynecomastia , loss of libido and azospermia in males .

R/ **Nizoral** 200 Tab.
R/ **Kizol** 200 mg Tab .
R/ **Ketoconazole** 200 mg Tab.
R/ **Fungizole** 200 mg Tab .
R/ **Ketozole** 200 mg Tab.

2- Fluconazole :

- Similar to Ketoconazole , but lacks its endocrine side effects .
- Orally for oro-pharyngeal & vaginal candidiasis & various Tinea infections .

R/ **Diflucan** 50 , 150 mg Cap.
,, 5 mg / ml syrup.
,, 2 mg / ml I.V. infusion
R/ **Triconal** 50 , 150 mg Cap.
R/ **Flucoral** 150 mg cap.
R/ **Alkanazole** 150 mg Cap.
R/ **Fungican** 150 mg cap.
R/ **Trefulcan** 150 mg Cap.

3- Itraconazole : similar to fluconazole .

R/ **Sporanox** 100 mg Cap.
R/ **Itrapex** 100 mg Cap.
R/ **Itranox** 100 mg Cap.

4- Clotrimazole :

R/ **Candistan** cream .
R/ **Cansten** cream .
R/ **Dermatin** cream .
R/ **Locasten** cream .

5- Miconazole :

R/ **Daktarin** cream .
R/ **Miconaz** cream .

6-Terbinafine :

R/ **Terbinafine** 125,250mg Tab.
R/ **Terbin** 250 mg Tab.
R/ **fungisafe** 250 Tab.

Chapter -3 Dermatology

Allergy

Definition

An allergy is an exaggerated immune response or reaction to substances that are generally not harmful.

Causes, incidence, and risk factors

Allergy is caused by an oversensitive immune system, which leads to a misdirected immune response. The immune system normally protects the body against harmful substances, such as bacteria and viruses. In contrast, an allergic reaction is when the immune system reacts to substances (allergens) that are generally harmless and in most people do not cause an immune response.

In a person with allergies, the first exposure to the allergen triggers the immune system to recognize the substance. Any exposure after that will usually result in symptoms.

When an allergen enters the body of a person with a sensitized immune system, histamine and other chemicals are released by certain cells. This causes itching, swelling, mucus production, muscle spasms, hives, rashes, and other symptoms.

Symptoms vary in severity from person to person. Most people have symptoms that cause discomfort without being life-threatening. A few people have life-threatening reactions (called **anaphylaxis**).

The part of the body contacted by the allergen will, in part, affect the symptoms. For example, allergens that are inhaled often cause nasal congestion, itchy nose and throat, mucus production, cough, or wheezing. A food allergen can cause nausea, vomiting, abdominal pain, cramping, diarrhea, or a severe, life-threatening reaction. Allergies to plants often cause skin rash. Drug allergies usually involve the whole body.

Some disorders may be associated with allergies. These include eczema and asthma, among others.

Common allergens include those that contact the skin, breathing passages, or the surface of the eye (such as pollen;). Food allergies and drug allergies are common. Allergic reactions can be caused by insect bites, jewelry المجوهرات, cosmetics, and almost any substance that contacts the body (contact dermatitis.)

Some people have allergic-type reactions to hot or cold temperatures, sunlight, or other

physical stimuli. In some persons, friction (rubbing or vigorously stroking the skin) will cause symptoms. Allergies are relatively common. Both hereditary and environmental factors have been found to play a role.

Symptoms

Allergy symptoms vary depending on what is causing the reaction and the part of the body where the reaction occurs. Symptoms can include:

- runny nose
- tearing eyes, burning or itching eyes
- red eyes, conjunctivitis
- swollen eyes
- itching nose, mouth, throat, skin, or any other area
- wheezing
- coughing
- difficulty breathing
- hives (skin wheals)
- skin rashes
- stomach cramps
- vomiting
- diarrhea
- headache

Signs and tests

The history of symptoms is important in diagnosing all allergies, including whether the symptoms vary according to time of day, season, exposure to pets and other potential allergens, and diet changes.

Allergy testing may be required to determine if symptoms are an actual allergy or caused by other problems. For example, eating contaminated food (food poisoning) may cause symptoms that resemble food allergies. Some medications (such as aspirin, ampicillin, and others) can produce non-allergic reactions, including rashes, that resemble drug allergies but are not true allergies.

Tests that may reveal the specific allergens include:

- **Skin testing** -- the most common method of allergy testing. This may include intradermal, scratch, patch, or other tests. Skin testing may even be an option for young children and infants, depending on the circumstances.
- **Blood test** -- also called RAST (radioallergosorbent), this measures the levels of allergy antibody, IgE, produced when blood is mixed with a series of allergens in a laboratory. If patient is allergic to a substance, the IgE levels may increase in the blood sample. The blood test may be used if the patient has existing skin problems like eczema, if the patient is on medications that are long-acting or he cannot stop taking, if he has a history of anaphylaxis, or if he prefers not to has a skin test.
- **"Use" or "elimination" tests** -- suspected items are

eliminated and/or introduced while the person is observed for response to the substance. This is often used to check for food or medication allergies.

- **Eyelid** -- Occasionally, the suspected allergen is dissolved and dropped onto the lining of the lower eyelid (conjunctiva) as a means of testing for allergies. (This test should only be done by a physician, never the patient, since it can be harmful if done improperly.)
- **Reaction to physical stimuli** -- application of heat, cold, or other stimulation, and then look for an allergic response.

Other tests that may reveal allergies include:

- Antibody/immunoglobulin (particularly IgE) levels -- when these are elevated, it indicates a "primed" immune system CBC -- may reveal an increase in eosinophils.

Treatment

- The best "Treatment" for patient is to avoid what causes allergic symptoms in the first place. It may be impossible to completely avoid all allergens to which he is sensitive, but he can often takes steps to reduce exposure.

Medication options include the following:

- Short-acting antihistamines :

R / **Claritine tab.** قرص واحد يوميا

- Longer-acting antihistamines

R / **Telfast (fexofenadine) 120 mg or 180 mg. tab.**
Or : **Zyrtec (cetirizine) tab.**
قرص ١-٢ مرة يوميا

-Nasal corticosteroid sprays work very well for people with symptoms not relieved by antihistamines alone.

R / **Flixonase (fluticasone) nasal spray .**
Or : Zalastin (Azelastine) nasal spray .
بخة فى كل أنف مرة واحدة يوميا لمدة شهر

- Decongestants may also be helpful in reducing symptoms such as nasal congestion, but they should not be used for long periods.

R / Rhino pro cap.
كبسولة كل ١٢ ساعة

- Cromolyn sodium for treating hay fever.
  R / **Nasotal nasal spray .**
  Or : **Nazocrom spray .**
  بخة فى كل أنف عند اللزوم
- The leukotriene inhibitor to help control asthma and to help relieve the symptoms of seasonal allergies.
  R / **Singulair (montelukast) tab.**
  قرص واحد قبل النوم يوميا

- Desensitization may be needed : in which Allergy shots (immunotherapy) are occasionally recommended if the allergen cannot be avoided and symptoms are hard to control. Regular injections of the allergen are given, with each dose slightly larger than the previous dose. Allergy shots keep body from over-reacting to the allergen.

InSevere reactions (anaphylaxis) require epinephrine, which can be life saving when administered soon after exposure by patients themselves.

Complications

- discomfort during the allergic reaction
- disruption of lifestyle
- drowsiness and other side effects of antihistamines
- anaphylaxis (life-threatening allergic reaction)

Prevention

Children who have been breastfed are less likely to have allergies. In addition, a mother who avoids cow's milk, eggs, nuts, and peanuts while breastfeeding can prevent allergy-related conditions, including eczema, in some children.

There is also evidence that infants exposed to certain airborne allergens (such as dust mites and cat dander) may be less likely to develop related allergies. This is called the "hygiene hypothesis" and infants on farms tend to have fewer allergies than those who grow up in environments that are more sterile.

Once allergies have developed, treating the allergies and carefully avoiding those things that cause reactions can prevent allergies in the future.

Urticaria

Symptoms :
Reddish itchy wheals of different sizes , each wheal disappears within 48 hours & new ones appear at different sites, Urticaria appears suddenly & last hours or days & then fade away .

Treatment :

In acute urticaria :

R/ Epinephrine (Adrenaline) Amp.
نصف إلى أمبول واحد تحت الجلد عند اللزوم

R/Fortecortin amp.
أمبول بالوريد كل ١٢ ساعة

R/ Tavagyl tab.
قرص صباحا و قرص مساءا

Or : Avil retard tab .
قرص ٣ مرات يوميا

In chronic cases :

R/ Atarax tab .
قرص ٣ مرات يوميا

R/ Anallarge Tab .
Or : Claritine tab
Or : Telfast tab
قرص مره واحدة يوميا

Urticaria in children

R/ Triactin syrup.

Or : Tavegyl syrup
Or : Avil syrup
نصف إلى معلقة صغيرة ٣ مرات يوميا
R/ phenadon syrup
نصف إلى معلقة صغيرة ٣ مرات يوميا
R/ Kalmino lotion .
Or: Kalamino cream .
دهان موضعى مرتين يوميا

N.B) Pickles , spices , fats , fish , egg , milk , lentils , banana , chocolates , mango , strawberry & apricot should be avoided .
تجنب التوابل و الأطعمة الحريفة و الدهون و السمك و البيض و اللبن و العدس و الموز و الشيكولاته و المانجو و الفراولة و المشمش .

Eczema

It is an allergic skin disease characterized by erythema , vasiculation & oozing .

Types :

1-Contact dermatitis .
2-Atopic dermatitis (Eczema) .
3-Seborrhoeic Eczema .
4-Discoid Eczema .
5-Varicose Eczema .
6-Infective Eczematoid dermatitis .

Treatment :

R/ Potassium permanganate 1/8000
Or : Boric Acid lotion 2-4 %
سأسأة مرتين يوميا
R/ Betnovate cream .
Or : Baycuten cream .
Or : Locacorten cream.
Or : Betaderm cream.
Or : Quaderiderm cream.
دهان موضعى مرتين يوميا
R/ Tavagyl syrup.
R / Tavagyl tab.
Or: Avil syrup .
قرص أو معلقة ٣ مرات يوميا
N.B) Syrup used in children .
R/ Vibramycin cap.
كبسولة كل ١٢ ساعة

Scabies

Symptoms : Severe itching mainly at night .

Diagnosis : lesions consists of papules , burrows , vesicles marks

Treatment

R/ Sulphur soap .
Rubb to the body with tough loffa then wash with water
R/ Eurax lotion .
دهان للجلد مرتين يوميا لمدة ٣ أيام
R/ Histazine tab. قرص عند النوم لمنع الهرش

Comments

* under wear & bed Covers should be changed after each time of application during the 3 days of therapy . Massage for the non-infected areas of skin is needed during the therapy .

* Sulphur soap has good activity against scabies .also Scabinol soap & Fungisalt soap contain sulphur & other other agents effective against scabies .

* Histazine *contain Cetrizine which is an effective agent in ttt of allergy & itching – other pren. Contain cetrizine are (*Alerid - Cetrak – Epirizine – Tomazine - Zyrtec *)*

بالرغم من ان الجرب من الامراض سهلة المعالجة – الا ان العدوى به سريعة مثل باقى الحشرات المعدية (القمل) – لذلك يجب عدم نوم

الطفل المصاب بجوار الاخرين حتى ثلاث ايام من المعالجة كما يجب غيار الملابس الداخلية وملاية السرير و غليها بالماء بعد كل مرة دهان لمدة ٣ ايام . (– لمنع الانتكاس (عودة الاصابة

⁕ Amoxicilline *is given in case of secoundry bacterial infection .*

⁕ *most of drugs effective in ttt of scabies are also effective in ttt of pediculosis .*

⁕ Eurax : contain Crotamiton radicate scabis after 3 days of treatment , its effect like { Benzanil emulgel – Gammabenzyl lotion - Ectomethrin lotion & cream }

Patient education

1- Although scabies treatment is easy whoever the infection of one member to anthor is very easy also.
2- This type of infection (and also pediculosis) widespread in village & low social peoples (especially between children)
3- all clothes & bed covers should be boild at least during the 3 days treatment ,& until curance .
4- in case of group infected with scabies (e.g. the family) they should treated together at one time .
5- avoid contact with patient (e.g. sexual contact – sleeping beside the patient) also avoid dreesing the patient clothes .

Pediculosis

Common in unhygienic environment .

Common among school children .

Methods of transmission : direct by head to head contact or indirect through combs and brushes .

Diagnosed by finding the Nits on hair shafts orLice on on skin or clothes + Itching .

Treatment :

R/ Grisofulvin F.P tab.

قرص لكل ١٠ كجم من وزن الجسم يوميا لمدة ٦ أسابيع

R/ Tr.iodine 2 %

Or: Tineacure Lotion

Or : Batrafen cream .

Or : Daktarin cream.

دهان موضعى مرتين يوميا

R/ Item shampoo .

Or : Licid lotion or spray .

Or : Prioderm Lotion .

Or : Quick lotion .

Or : Ectomethrin 2.5 %

البخاخ أو اللوسيون يوضع على الشعر الجاف لمدة من ربع إلى نصف ساعة ثم يشطف بالماء و الصابون و يمشط لإزالة القمل البيت ، أما الشامبو فيدعك فى الشعر المبلل بالماء حتى ظهور رغوة ثم يترك لمدة ربع ساعة و يشطف بالماء و ينشف و يمشط لإزالة القمل الميت . يجب تجنب ملامسة العينين ، و إذا حدث تشطف بسرعة بالماء .

R/ Septrin syrup .

ملعقة كل ١٢ ساعة لمدة ٥ أيام

Tinea Circinata

Circular patches , with red scaly edge contains vesicles , pustules & possess a clear centre . Occur on exposed skin surfaces + pruritis .

Treatment :

R/ Grisofulvin F.P tab.

قرص بعد الأكل مرتين يوميا 2

R/ Tr.iodine 2 %

Or : Tineacure lotion

مس مرتين يوميا

R/ Locasten cream

Or: Daktarin cream .

Or: Nzoral cream.

Or : Whitfield Oint.

دهان موضعى مرتين يوميا

Favus

A raised concave , yellowish , saucer-shaped crust surrounding the opening of the hair follicle, called sulphur cup + Erythematus patches ± Alopecia .

Tinea cruris

Well-defined peripherally spreading & Centrally clearing erythematus patch ±Vesicles + Itching .

Sites : Affects the upper medial side of the thigh , buttocks and pubic area .

Treatment :

R/ Grisofulvin F.P tab

قرصان مرتين يوميا لمدة شهر

Or: Diflucan 150 mg Tab .

كبسولة مرة واحدة فى الأسبوع لمدة ٤ أسابيع

R/ Tr.iodine 2 %

Or: Castellani´s Paint .

مس مرتين يوميا

R/ Dermatin cream.

Or: Lamisil cream.

Or: Tineacure cream .

دهان موضعى مرتين يوميا

Tinea versicolor

Affects the trunk , adjacent parts of upper arms and neck ⇨Coloured scaly macules , Few mm. to several cm. in diameter , whitish , brownish or rosy red in colour .
Itching is absent.

Treatment :

R/ Sulphur soap .

R/ Fluconazole 150 mg .

Or : Diflucan cap.

Or: Trichonal cap.

Or : Flucoral Cap

كبسولة واحدة أسبوعيا لمدة أسبوعين

N.B Grisofluvin has no role in tinea versicolor-candidiasis .

OR/ Nizoral tab.

قرص بعد الغداء يوميا وسط الأكل لمدة ١٠ أيام -٣ أسابيع

R/ Tr.iodine 2 % Sol.

Or: Cansten Lotion

مس موضعى مرتين يوميا

R/ Nizoral shampoo

Or: Seboral shampoo.

Or: Nizapex shampoo.

Or: Curazole H shampoo.

شامبو للشعر كل أسبوع لمدة ٤ أسابيع

R/ Dermatin cream.

Or: Lamisil cream.

Or: Tineacure cream .

دهان موضعى مرتين يوميا

N.B) 1-Ultraviolet rays later for hypopigmented areas .

التعرض للأشعة فوق البنفسجية

2- Inner clothes should be boiled .

تغلى الملابس الداخلية يوميا

3-Continue treatment for 6weeks .

يستمر العلاج لمدة ٦ أسابيع

Tinea pedis (Athlete's foot)

+ It is also known as:
Dermatophytosis , Tinea of palms & Soles , Athlete´s foot .
+ Clinically ⇨Interdigital whitish macerated skin + Itching
OR: vesicles & bullae + Itching & pain .
OR : Hyperkeratosis (Patchy or diffuse) .

Causes

The body normally hosts a variety of saprotrophic microorganisms, including bacteria and fungi. Some of these are useful to the body. Pathogenic or disease causing organisms or the overgrowth of saprotrophic ones can multiply rapidly and cause infection. Athlete's foot is a layman's description of a skin fungal infection. Fungal infections of the skin are called dermatophytosis. Dermatophytes may be spread from other humans (anthropophilic), animals (zoophilic) or may come from the soil (geophilic). Infections or infestations occur when dermatophytes grow and multiply in the skin.

Growth environment

Growth of the athlete's foot fungus is promoted by a dark, warm, moist environment such as that found inside shoes. The fungi persist for a long time in the environment, facilitating transmission of the disease in communal areas such as locker rooms and showers.

Symptoms

Intertrigo between toes

Athlete's foot causes scaling, flaking and itching of the affected skin. Blisters and cracked skin may also occur, leading to exposed raw tissue, pain, swelling, and inflammation. The infection can be spread to other areas of the body, such as the armpits, knees, elbows, and the groin, and usually is called by a different name once it spreads (such as jock itch or tinea cruris for an infection of the skin of the groin).

Treatment :

R/ Potassium permanganate 1/8000 .
Or: Boric acid Lotion .
مس للأصابع مرتين يوميا
R/ Batrafen solution
Or: Trosyd1%lotion .
مس موضعى مرتين يوميا
R/ Trosyd cream
Or : locasten cream .
دهان موضعى مرتين يوميا
Or: Miconaz powder .
بودرة موضعية كل صباح
R/Diflucan 150 cap.
كبسولة مرة واحدة فى الأسبوع لمدة ٤ أسابيع
Or : Terbin tab .
قرص مرة واحدة يوميا لمدة ٦ أسابيع
ملحوظة : يجب غسل الجوارب فى ماء مغلى يوميا

Onchomycosis
عدوى الأظافر

The nail is brittle & fissured with a hyperkeratotic plug beneath its free margin .

Treatment :

R/ Lamisil 250 Tab. قرص واحد
يوميا لمدة أسبوعين كل شهر لمدة ٦-١٢ شهرا
Or : Ketozole 200 mg Tab.
قرص واحد يوميا لمدة شهر
Or : Grisofulvin F.P. Tab.
٤أقراص يوميا لمدة شهر
R/ Trosyd 28 % solution for nails .
يدهن الظفر المصاب و المنطقة المحيطة به
بالفرشاة المثبتة بغطاء الزجاجة لمدة ٦-١٢شهرا
R/ Lamisil cream.
Or : Trosyd cream .
دهان موضعى مرتين يوميا

Cutaneous candidiasis (Moniliasis)

Candidiasis, commonly called yeast infection or thrush, is a fungal infection of any of the *Candida* species, of which *Candida albicans* is the most common

Manifestation : found in exposed and moist parts of the body, such as:

1- the oral cavity (oral thrush)
2- the vagina and/or vulva (vaginal candidiasis or thrush)
3- folds of skin in the diaper area (diaper rash)
4- the nipples while breastfeeding

Candidiasis is the second most common cause of vaginal irritation or vaginitis,
and can also occur on the male genitals, particularly in uncircumcised men.

In immunocompromised patients, the *Candida* infection can involve the esophagus and can become systemic, causing a much more serious condition, fungemia.

Children, mostly between 3 and 9 years old, can be affected by chronic mouth yeast infections. It is normally seen around the mouth as white patches. However, this is not a very common condition.

Cause

At least three quarters of all women will experience candidiasis at some point in their lives. The Candida albicans organism is found in the vaginas of almost all women and normally causes no problems. However, when it gets out of balance with the other "normal flora," such as lactobacilli (which can also be harmed by using douches), an overgrowth and symptoms can result. Pregnancy, the use of oral contraceptives, Antibiotics and diabetes melitus can also lead to an increased incidence in yeast infections.

Symptoms

Symptoms include severe itching, burning, and soreness, irritation of the vagina and/or vulva, and a whitish or whitish-gray discharge.

Diagnosis (potassium hydroxide) preparation can be diagnostic. A scraping or swab of the affected area is placed on a microscope slide. A single drop of 10% solution of KOH is then placed on the slide. The KOH dissolves the skin cells but leaves the *Candida*

untouched. When viewed under a microscope the hyphae and pseudo spores of *Candida* are visible. Their presence in large numbers strongly suggests a yeast infection. Swab and culture is performed by rubbing a sterile swab on the infected skin surface. The swab is then rubbed across a culture medium. The medium is incubated for several days, during which time colonies of yeast and/or bacteria develop. The characteristics of the colonies provide a presumptive diagnosis of the organism.

+ Predisposing factors include : pregnancy , diabetes , cushing´s syndrome , debilitated states & systemic administration of antibiotics. Steroids & Contraceptive pills.

Treatment :

- For Vaginal moniliasis :

R/ **Gynozol vaginal supp**

.لبوس مهبلى مرة واحدة يوميا لمدة ١-٢ أسبوع

R/ **Fungican cap .**

كبسولة واحدة يوميا و تكرر بعد أسبوع

- For Cutaneous Lesion :

R/ **Castellani´s paint** .

مس موضعى مرتين يوميا مع تجنب نقع اليدين . و القدمين فى المياه

R/ **Mycostatin cream .**

Or : **Miconaz cream .**

Or:**Nystatin cream .**

Or : **Daktarin cream**

دهان موضعى مرتين يوميا

R/ **Diflucan 150 cap .**

كبسولة مرة واحدة كل أسبو ع لمدة أسبوعين

R/ **Flucamox cap .**

Or: **Erythrocin tab** .

قرص أو كبسولة كل ٦ ساعات

And Treatment of predisposing factors .

-For thrush :

R/ **Dktarin oral gel .**

Or : **Miconaz oral gel .**

دهان موضعى للفم و اللسان ٢-٣ مرات يوميا

OR : **Mycostatin oral drops.**

Or : **fungistatin oral drops**

ملو قطارة بالفم كل ٦ ساعات

Impetigo Contaginosa

•Aflat red spot ⇨Vesicle ⇨yellowish or brownish crust , more common in children and infants .

•Sites : Face , ears , neck , hands & scalp .

•Types : Vesicular , circinate , bullous , ulcerative & impetigo neonatorum (in Axillae & groin) .

Treatment :

R/ **Potassium permenganate 1/8000**

Or: **Boric acid 4 %** مس موضعى مر تين يوميا

R/ **Terramycin skin oint.**

Or: **Fucidin cream** . دهان موضعى مرتين يوميا

R/ **Flumox cap** .

Or : **Erythrocin Tab.** قرص أو كبسولة كل ٦ ساعات

& **flumox susp.** (for infant & children) .

Erysipelas

Infection of the dermis by hemolytic streptococci .

Symptoms: Fever , malaise , rigors + red hot area ± vesicles + Leucocytosis & raised E.S.R .

Treatment :

R/ Flumox 500 vials
Or Flucamox 500 vials
حقنة عضل كل ١٢ ساعة حسب العمر .
R/ Paramol tab .
قرص ٣ مرات يوميا
راحة تامة فى السرير

Furuncles (Boils) & Carbuncles

Boil: Acute , painful staphylococcal infection of a haier follicle .
Carbuncle: It is a ggregation of adjacent boils , common in diabetics (on the back of the neck) .

Treatment :

R/ Flumox 500 vial Or Cefotax 1 gm vial
. حقنة عضل كل ١٢ ساعة حسب السن
OR / Velosef 1 gm cap .
Or : Augmentin 1 gm .
قرص أو كبسولة كل ١٢ ساعة
R/ Garamycin cream .
Or : Fucidin cream .
Or : Baneocin cream
Or : Ichthammol oint .
دهان ٢-٣ مرات يوميا

- Surgical incision & drainage of the pus .
- Treatment of predisposing factors as . D.M.

Herpes simplex

+ Gingivo-stomatitis or Vulvo-vaginitis or Herpatic Keratoconjunctivitis, or herpes labialis , & H. Progenitalis ⇨ Recurrent small grouped vesicles on an erythematous base ± Regional lymphadenitis .
+ Herpes may be stimulated by fever , common cold & Influenza .

Treatment :

R/ Gentian violet 1 %
مس موضعى للجلد مرتين يوميا
R/ Garamycin cream.
Or : Terramycin cream .
دهان موضعى مرتين يوميا
R/ E-mox 500 cap .(to prevent secondary infection)
كبسولة كل ٨ ساعات
N.B) Antiviral drug may be given .
R/ Zovirax Oint (for skin) .
Or : Zovirax Eye Oint (For Eye) . مرهم موضعى ٥ مرات يوميا
R/ Zovirax tab.
(قرص كل ٤ ساعات (٥ مرات يوميا
N.B . corticosteroids are contraindicated .

Herpes zoster

-Pain + Unilateral grouped vesicles on an erythematous base a long a sensory nerve .
-Vesicles ⇨ crusts if 2 ry . infected ⇨Pustules ± Post- herpatic neuralgia ± Regional lymphadenitis .
-Occur on face & trunk .

Treatment :

R/ Ponstan cap .
Or : Ketofan cap .
كبسولة ٣ مرات يوميا بعد الأكل
R/ Gentian violet .
مس ٣ مرات يوميا
R/ Viru merz oint .
Or :Zovirax oint . دهان مرتين يوميا

R/ Depovit B12 Amp .

حقنة عضل كل أسبوع

R/ Neurontin 400 mg cap .

كبسولة يوميا تزاد تدريجيا إلى ٣-٦ كبسولات يوميا

Or : Tegretol 200 mg tab.

نصف-١ قرص ٣ مرات يوميا

•Infiltration of involved skin with xylocaine

الحقن الموضعى للمنطقة المصابة بالزيلوكين

Warts

Are caused by a virus , they are Warty elevations on the skin or mucous membrane with spontaneous Cures .

Treatment :

Removal by keratolytic agent : e.g. 40 % salicylic acid plaster which left for days then replaced by a new one until removing the wart , It may take months to remove the wart .

Or : R / Salicylic acid 3.5 Alcohol, 40 % qs ad 120

مس موضعى كل مساء لمدة شهر

- If warts didn´t disappear , use the electric cautary .

إذا لم تختفى الثآليل تزال بالكى الكهربى

Or : Removal by surgical excision followed by painting with Glacial acetic acid (Local paint once daily at night) .

Acne vulgaris

Different types of Acne Vulgaris:

A: Cystic acne on the face,

B: Subsiding tropical acne of trunk,

C: Extensive acne on chest and shoulders.

How acne occurs ?

The most common form of acne is known as "acne vulgaris", meaning "common acne." Excessive secretion of oils from the sebaceous glands accompanies the plugging of the pores with naturally occurring dead skin cells (corneocytes) blocking hair follicles. The accumulation of these corneocytes in the duct appears to be due to a failure of the normal keratinization process in the skin which usually leads to shedding of skin cells lining the pores. Oil secretions are said to build up beneath the blocked pore, providing a perfect environment for the skin bacteria Propionibacterium acnes and the lipophilic (oil/lipid-loving) yeast Malassezia to multiply uncontrollably. Under the microscope, however, there is no evidence of pooled trapped sebum. Indeed the oil percolates through the plugged duct onto the surface. In response to the bacterial and yeast populations, the skin inflames, producing the visible lesion. The face, chest, back, shoulders and upper arms are especially affected.

The typical acne lesions are: comedones, papules, pustules, nodules and inflammatory cysts. These are the more inflamed form of pus-filled or reddish bumps, even boil-like tender swellings. Non-inflamed 'sebaceous cysts, more properly called epidermoid cysts, occur either in association with acne or alone but are not a constant feature. After resolution of acne

lesions, prominent unsightly scars may remain.

Aside from scarring, its main effects are psychological, such as reduced self-esteem and depression. Acne usually appears during adolescence, when people already tend to be most socially insecure.

Causes of acne :

Exactly why some people get acne and some do not is not fully known. It is known to be partly hereditary. Several factors are known to be linked to acne:

1- Hormonal activity, such as menstrual cycles and puberty
2- Stress, through increased output of hormones from the adrenal (stress) glands.
3- Hyperactive sebaceous glands, secondary to the three hormone sources above.
4- Accumulation of dead skin cells.
5- Bacteria in the pores, to which the body becomes 'allergic'.
6- Skin irritation or scratching of any sort will activate inflammation.
7- Use of anabolic steroids.
8- Any medication containing halogens (iodides, chlorides, bromides), lithium, barbiturates, or androgens.

✎ True acne vulgaris in adults may be a feature of an underlying condition such as pregnancy and disorders such as polycystic ovary syndrome or the rare

Symptoms : Black & white heads , greasy skin .
It occurs at puberty .
Comedone (black head) = dried sebum inside the hair follicle
OR red papules ,pustules ,Nodules , or cysts over the face , back & shoulders .

Treatment :

R/ salycilic acid soap لغسيل الوجه
Then (Tretinoin) R / Acne free cream
دهان مرتين يوميا مع عدم التعرض للشمس
Then (Topical antibiotic)
R/ Akneroxid cream دهان بعد أكنى فرى
Then (oral antibiotic)
R/ Tetracyclin 500 mg cap.
Or : Dalacin C 150 Cap .
Or : Clindacin 150 Cap
كبسولة كل ١٢ ساعة
R/ Vit A 2500 I.U tab.
قرص مرة واحدة يوميا

NB :

-Comedones (black heads) may be extracted by comedo extractor .
- Nodular & Cystic lesions may respond to intralesional injection of corticosteroids (e.g. Kenacort A vial) .

- In Women :

R/ Diane tab.
قرص واحد يوميا لمدة ٣ أسابيع ، بدءً من اليوم الخامس للدورة ، ثم يوقف لمدة أسبوع ثم يكرر لمدة ٣ أسابيع يعقبها أسبوع بلا علاج ، ثم يكرر بنفس النظام لمدة ٣-١٢ شهرا مع إستبعاد الحمل و عدم إستخدام أقراص منع الحمل فى نفس الوقت

Patient Education :

1. keep affected area free of grease by regular washing with an unperfumed soap .
2. no picking .

3. Treat insomnia , anxiety & tension . يعالج الأرق و القلق و التوتر
4. Avoid fats , carbohydrates , chocolate , fish , spices , pickles & alcoholic beverages .

تجنب الدهون و النشويات و الشيكولاته و السمك و التوابل و المشروبات الكحولية

Alopecia Areata القراع

Sudden loss of hair in a circumscribed area of the scalp , patches are completely bald & clean (No scales) and the cause is unknown but may be attributed to psychic trauma .

Treatment :

R/ Tr.Iodine 2 %

مس موضعى مرتين يوميا

R/ Hair back Lotion .
Or : Rehair lotion .
Or : Regain lotion .
1 ml sprayed to the affected area twice daily beginning from the center outwards . 4 months or longer may be required before evidence of hair growth is observed .
R/ Calmepam 1.5 tab.
Or : Valinil 5 mg tab.
Or : Buspar tab . قرص قبل النوم
R/ Hairvit cap .
Or : Pantogar cap .

كبسولة مرتين يوميا

Or : Vitamax cap .
Or : Neuroton tab.

قرص أو كبسولة مرة واحدة يوميا

R/ Kenacort-A vial
Or : Depot-medrol vial .

حقنة عضل كل شهر

N.B

1- lesions may heal spontaneously within 4-6 months .
قد تتحسن الحالة تلقائيا خلالف ٤-٦ ساعات
2-Treatment of nervous strain and stress. معالجة الضغوط النفسية و الإجهاد

Seborrhoea

Oiliness of the face and sclap

Treatment

R/ Hairstabil shampoo .
Or : Betadine shampoo .
Or : Zakan shampoo .
Or : Nizoral shampoo .
Or : Lunazole shampoo .

١-٢ ملعقة من المستحضر توضع على راحة اليد و تدلك بها فروة الرأس ثم يغسل بالماء الدافىء لعمل رغوة لمدة ٥ دقائق ثم يشطف بالماء و يكرر ذلك مرتين أسبوعيا .

N.B

1- Eyes must be protected .
2- These shampoo & lotion must be avoided in case of wounds or abrasions of the scalp.

تجنب إستعمال هذه الشامبوهات فى حالة وجود جروح أو تقرحات بفروة الرأس

Vitiligo البهاق

Well-defined , depigmented , milk-white macules with hyperpigmented border .

Treatment :

R/ Vitivera cream .
Or :Ezalline paint .

تدهن مناطق الجلد المصابه بطبقة رقيقة قبل

التعرض لأشعة الشمس بنصف ساعة ثم تعرض هذه المناطق إلى أشعة الشمس لمدة ٣٠-٦٠ دقيقة و يستمر العلاج لمدة ٦ أشهر(تجنب شمس الظهيرة)

R/ **Ultra-meladinine cap** .
Or: **Meladinine tab.**
قرص أو كبسولة ١-٢ مرة يوميا قبل التعرض للشمس .

R/ **Viterra cap** .
كبسولة بعد الأكل مرتين يوميا

1-Ultraviolet rays 2-3 times / week
التعرض للأشعة الفوق بنفسجية ٢-٣ مرات أسبوعيا

2- Therapy of vitiligo is long and tedious . علاج البهاق طويل و مرهق

Psoriasis الصدفية

- Red papules and plaques covered with silvery laminated scales , occur on the extensor surfaces of the limbs , elbows , knee and scalp & may be accompanied by itching .
- Psoriasis of nails ⇨Pitting , Transverse ridging and brittleness .
- Psoriasis is characterized by remissions and relapses , where psoriasis usually improves in summer to recur in winter & It may disappear spontaneously for years to recur again .

Treatment :

1-In mild cases : by Topical preparation contain Cortecosteroids e.g
R /**Betnovate ceam.**
Or : **Betaderm cream.**
Or : **Perderm cream** .
Or : **Locacorten cream** .
دهان مرتين يوميا

2-In case of thick scales : by Topical preparation contain Cortecosteriods + Keratolytric agent like salicylic or coal tar e.g .
R/ **Diprosalic cream.**
Or : **Locasalen cream.**
Or : **Locacorten tar cream** .
Or : **Sorana cream** دهان مرتين يوميا
R/ **Methotrexate sodium**
٢٥ مجم مرة واحدة أسبوعيا
R/ **Tigasan tab** (not available in Egypt)
OR ; Treatment by ultraviolet irradiation .

Gonorrhea السيلان

Due to infection by Neisseria gonorrhoea which can infect urethra , cervix , rectum , pharynx or conjunctiva.

Symptoms

The incubation period varies from 2 to 14 days with most symptoms occurring between days 2 and 5 after being infected from an infected partner. A small number of people may be asymptomatic for up to a year.

Male : Thick creamy yellowish uretheral discharge ± dysuria ; or procitis .
Female : Vaginal discharge , dysuria , Proctitis .

Complication :

-Local : prostatitis , cystitis , epididymitis ,salpingitis .
-Systemic : Septicemia and arthritis .

Notes :

✎Gonorrhea spreads during sexual intercourse, whereby the infective partner does not need to be human .{i.e. may be animal}

Vertical transmission من الام للجنين

Pregnant mothers infected with gonorrhea, can transmit the disease to their babies during childbirth. Gonococcal conjunctivitis is a major preventable cause of blindness in newborns, so if there is a known risk of transmitting gonorrhea, prophylactic silver nitrate or other medications may be applied to the baby's eyes immediately after

Diagnosis

1- 3 laboratory techniques to diagnose gonorrhoea: staining samples directly for the bacterium➢detection of bacterial genes or DNA in urine, and ➢growing the bacteria in laboratory cultures. Many doctors prefer to use more than one test to increase the chance of an accurate diagnosis The staining test involves placing a smear of the discharge from the penis or the cervix on a slide and staining the smear with a dye.

Treatment :

R/ Cefazon Vial
Or : Claforan vial.
Or : Cefatriaxone vial

حقنة عضل مرة واحدة ولا تكرر

R/ Rifadine 300 Cap.
Or : Rimactane 300 cap .

٣ كبسولات على الريق فى اليوم الأول ثم ٢ كبسولة يوميا لمدة ثلاث أيام .

OR : Ciprofloxacin 500 tab.
Or : Ofloxacin tab

قرص كل ١٢ ساعة

R/Urisept tab. (analgesic) .

١-٢ قرص كل ٨ ساعات بعد الأكل

N.B)

No intercourse or sexual excitation until cured .

يمنع الإتصال الجنسى أو الإثارة الجنسية حتى يتم الشفاء

Syphilis الزهرى

Complex venereal infection caused by the spirochete treponeme pallidum . any organ or tissue of the body may be involved in the tertiary stage .

Stages of syphilis :

Primary : is called *chancre* : A macule becomes a very infectious , painless hard ulcer . It is usually : single , rounded , painless & indurated .

Sites :

1- Genital chancre (on the glans or shaft of the penis) .

2- Extra-genital chncre : on the lip , tongue , anus & nipple .

Secondary syphilis : Occurs 4-8 weeks after the chancre .Fever , malaise , lymphadenopathy , rash (trunk , face , palms , soles) & Condylomata (papules around the anus , vulva & inguinoscrotal area) .

Tertiary syphilis : follows 2-20 years after infection : there are gumma (granulomas occurring in skin , mucosa , bone , joints , rarely viscera e.g lung , testis) .

Cilinical signs of neurosyphilis and cardiovascular affection appear within 10-20 years of infection .

Treatment :

Chancre & secondary stage :

R/ Durapen 1200000 units vial .
Or : Penadur 1200000 units vial .
حقنة عضل فى كل إلية جرعة واحدة

Tertiary syphilis stage :

R/ Durapen 1200000 units vial .
Or : Penadur 1200000 units vial .
٢ حقنة فى العضل أسبوعيا لمدة ٣-٤ أسابيع

If penicillin allergy :

R / Erythrocin 500 tab
Or : Doxycycline 100 cap
قرص أو كبسولة كل ١٢ ساعة

Leprosy الجزام

It is chronic disease caused by mycobacterium .

1) Lepromatus leprosy :

Anaesthetic nodules or plaques .

- Sites : Supraorbital region , lobule of the ear , forehead & face →Leonine appearance .
- Recurrent attacks of rhinitis & epistaxis .
- Loss of outer 1/3 of eyebrows .
- Negative lepromine test .

2) Tuberculoid leprosy :

- Anaesthetic erythematous or hypopigmented macules .Loss of hair & sweating , occurring mainly on the buttocks .
- Thickened ulnar , lateral popliteal Fir / or great auricular nerves , ± Glove & stocking anesthesia .
- Trophic ulcers on the fingers & Toes .
- Perforating ulcer of feet .
- Claw hand .
- Nasal scraping is + ve for lepra bacilli .

3) Border line type : intermediate between the above 2 types

4) Indetrminate type : Non-specific inflammation in the dermis + Laprae bacilli in sch. Cells .

Treatment

Lepromatous type is infectious & needs treatment for life , while tuberculoid leprosy only needs treatment for 2 years after disappearance of signs of activity .

R/ Rimactane 300 cap .
Or : Rifadin 300 cap .
٢ كبسولة على الريق كل شهر لمدة ٣ أشهر

R/ Dapsone 50 mg Tab.
قرص واحد يوميا

R/ Lamprene 100 mg Cap .
كبسولة يوم بعد يوم

Chapter-4
Gastrointestinal diseases

Acute pancreatitis

It usually affects elderly & obese patients with a history of gall stones .

Causes : Gallstones , Ethanol , Trauma , steroids , Mumps , Auto-immune disease ,Hyperlipidemia (↑ Ca++ ,hypothermia) or drugs as azathioprine .

Symptoms : Gradual or sudden severe epigastric or central abdominal pain (radiates to back); vomiting is prominent .
Sitting forward may relive pain .

Signs : Tachycardia , fever , Jaundice , shock , rigid abdomen ± local / generalized tenderness and periumbilical discolouration (Cullen´s sign or , at the flanks , Grey Turner´s sign)

Tests :
1-Serum amylase > 1000 u/ml , but amylase may be normal even in severe pancreatitis as amylase starts to fall within the first 24-48 h .
2-Serum lipase is more sensitive and specific for pancreatitis .

- Plain X-ray of the abdomen may show gall stones , & there is no gas under the diaphragm .
- It should be differentiated from the following conditions :-

1- Perforation →rigidity + gas under the diaphragm .
2- Acute cholecystitis → pyrexia + tenderness in the right hypochondrium .
3- Acute appendicitis → tenderness in the right iliac fossa .
4- Small bowel obstruction → Profuse vomiting + colicky pain + active bowel sounds .
5-Perforated diverticulitis → tenderness in the left iliac fossa .
6-Paralytic ileus may complicate acute pancretitis .
•Hypocalcemia & hyperglycemia may occur.

Treatment :
1-Relieve shock with intravenous fluids (avoid sodium overload) , Calcium gluconate IVI
R/Ca gluconate 10 % sol. 10-20 ml IV repeated / 4 hr if needed.
And insulin for hyperglycemia .

2-Plasma or blood transfusion .
3-Relieve pain with :
R/ Pethidine 100 mg 2ml amp .
حقنة عضل أو وريد عند اللزوم
N.B : Morphine should be avoided as it induces spasm of the sphincter of the oddi .

4-Nasogastric suction .
شفط الإفرازات من المعدة والإثنى عشر

5-Oxygen and parental frusemide for respiratory distress ; ventilation may be necessary i.e. oxygen mask to correct hypoxemia according to paO2 .

6-Antibiotic for current sepsis ,
R/ Garamycin 80 mg amp
حقنة بالوريد أو العضل كل ٨ ساعات .

7-Diet low fat , no alcohol , high protein , vitamin supplements .
Surgical interference in case of :

1- Pancreatic abscess .
2- Pseudocyst : the cyst is drained into the stomach or intestine (if there is rapid enlargement or persistent obstruction of the dudenoum or common bile duct .
3- Surgical resection oth damaged pancreas for pancreatic ascites .

N.B.
1-beware of delayed pulmonary oedema , renal failure , abscess formation .
2- Mortality 20 % overall ; higher with elderly , hypotension , Oliguria , uraemia , hypoxia , disseminated intravascular coagulation .

Gastritis & Peptic ulcer

Diagnosis :
Gastric ulcer : Epigastric pain ¼ to 2 hours after meals , relived by alkalis & vomiting + Loss of weight ± Constipation .

Duodenal ulcer : Epigastric pain 2-4 hours after meals , relived by alkalis & food + weight gain + Heartburn & Waterbrash .

Fasting test meal (F.T.M)
-Gastric ulcer : Normal or increased HCL + blood
-Duodenal ulcer : increased HCl with no blood .
X-ray with barium meal :
- Gastric ulcer : niche & notch .
- Duodenal ulcer : irregular , tender duodenal cap.

Endoscopy .
presence of H.pylori : Endoscopic biopsy , serological test & urea breath test .

Goals of therapy :
I-Relief of pain .
2-Promotion of healing .
3-prevention of recurrence .

Treatment :

I- Patient Education :

1-Rest;
a-Mental Rest : may use minor tranquilizer e.g Diazepam.
b-Rest in bed in case of acute hemorrhage .

2-Diet :
a-small frequent light meals .
b-AVOID heavy meals & meals rich in spices.

3-Habits : AVOID
a-smoking
b-Alcohol
c-Xanthine beverages (Coffee, Tea & Cola)
d-carbonated waters .
e-Chewing gum .

4-Drugs : AVOID
a-parasympathomimetics .

b-Tolaoline & Phentolamine .
c-Reserpine.
d-Anti-inflammatory drugs ;

- NSAID e.g. Aspirin , Declofenac & indomethacin.Allow only paracetamol
- SAID eg. Glucocorticoids such as Cortisol ,prednisolone & Dexamethasone .

e-Histamine
f-K CL .
g-Stromachics .
h-Digestants.

II-Drugs

- Motility regulation ;

R/ Motilium tab.
Or : Primperan tab.
قرص قبل الأكل ٣ مرات يوميا

A) Antacids : (Neutralization of secreted HCL) :
R/Mucogel syrup.
Or : Epicogel syrup.
Or : Acicone syrup .
ملعقة كبيرة بعد الأكل أو قبل النوم
OR/ Rennie tab.
Or : Glycodal tab .
Or : Alucal tab .
قرص إستحلاب بعد الأكل أو عند اللزوم 1-2

B) Antisecretory Drugs (reduction of acid secretion) :

1-H2-Receptor blockers :

Cimetidine :
. لم يعد يستخدم بسبب أثاره السيئة

Ranitidine :
R/ Zantac 150 mg or 300 mg .
Or : Ranitidine 150 or 300 mg .
Or : Ranitak 150 or 300 mg .
Or : Ranitidol 150 mg tab.
٣٠٠ مجم قبل النوم يوميا لمدة ٨ أسابيع

Famotidine & Nizatidine :
Similar to ranitidine but stronger e.g .
R/ Famotak 20 & 40 tab .
Or : Antodine 20 & 40 tab.
Or : Famotidine 20 & 40 tab.
Or : Nizatidine 300 mg tab.
قرص ٢٠ مجم مرتين يوميا أو قرص ٤٠ مجم قبل النوم .

2-Proton pump inhibitor (H+/k+ ATPase inhibitors) ; Examples
Omeprazole : 20-40 mg/day orally.)For 4 weeks (Duodenal ulcer) & Lansoperazole : 30 mg /day orally .)and 8 weeks (Gastric ulcer)
R/Gastrozole cap
Or: Losec cap
Or :Lanzor cap.
Or : Napizole cap.
Or : Zollipack cap .
Or ; pepzol cap .

3-Antimuscarinic Drugs (Pirenzapine) :
It is selective M1-Antagonist .
R/gastrozepin tab .
50 mg 2 times dialy for 4-6 weeks .

4-Prostaglandins : (Misoprostol) ;
Senthetic analogue of PGE1 has antisecretory & protective properties .
Mechanism : Misoprostol + PG receptor → Gi → ↓Adenylate cyclase → ↓cAMP .

N.B) Misoprostol is contraindicated in pregnancy because it may stimulate uterine contractions and induce abortion .

R/ Cytotec tab.
Or : Misotec tab.
Dose : 200 micro gm orally 3 times daily .

C) Mucosal protective
(Enhancement of mucosal resistance) .

1-Sucralfate :
R/Sucralfate tab .
Or : Gastrofait tab.
Dosage : 1g / 6 hrs orally ONE hour before meals . Requires acid PH for activation , So NOT administered with H2-blockers or Antacids .
2-Prostaglandins : Misoprostol .

Treatment of Active ulcer associated with H.pylori ;

1-Eradication of H.pylori therapy for 2 weeks .
2-Antisecretory agent for 4-8 weeks .

1-First line :

a-Triple therapy for Eradication of H.pylori for 2 weeks :
R/ Flagyl (Metronidazole) Tab.
قرص ٣ مرات يوميا
R/ Gastrofait Tab. 1gm 4 times daily on empty stomach , one hour before meals .
R/Tetracycline 500 cap.
1cap/6 hours
Or : Clarithromycin
b-Anti-secretory ;
H2-blocker e.g.R / Ranitidine 150 Tab. One tab 2 times daily orally for 6-8 weeks .

2- Alternative ;

a-Double therapy for Eradication of H.pylori for 2 weeks :
R/ Amoxicillin 500 Cap.
كبسولة كل ٦ ساعات
R/ Flagyl (Metronidazole) Tab .
قرص ٣ مرات يوميا
b-Antisecretory :
-Proton pump inhibitor
e.g R /Omeprazole Tab. 20 mg 2 times daily for 4 weeks (duodenal ulcer) & 8 weeks (gastric ulcer) .

Treatment of Active ulcer NOT attributed to H.pylori :

1- H2-Blocker for 6-8 weeks , either :
  a. Ranitidine tab. 300 mg before bed time or 150 mg 2 times daily .
  b. Famotidine tab. 40mg before bed time or 20 mg 2 times daily .
  c. Nizatidine orally .

OR

2-Proton pump inhibitor for 4 weeks (duodenal) & 8 weeks (Gastric) :
  a. Omeprazole tab. (20 mg 2 times daily)
  b. Lanzoperazole .

Prevention of ulcer Relapse = Maintenance therapy for 6 months ;

1-H2-blocker , ½ dose at bed time for 6 months ;

OR

2-Sucralfate 1g 4 times daily on empty stomach ,one hour before meals .

III- Surgery : may be required for severe hemorrhage , perforation or gastric outflow obstruction

Hiatus hernia
Gastro-oesophageal reflux

It is a retrograde (backward , against normal flow) movement of stomach contents into the esophagus due to dysfunction of the lower oesophageal sphincter , resulting in inflammation of the esophagus {reflux esophagitis }

Symptoms :

Heart burn , Retrosternal chest pain , acid & bile regurgitation , nocturnal asthma (cough /wheeze with minimal inhalation of gastric contents) . Manifestations increase by recumbency , relieved by upright position .

X-ray (barium study) : Herniation of cardio-esophageal junction .

Esophagoscopy

Esophageal Biopsy (to rule out malignancy) : Acid perfusion test .

PH metery of lower esophagus

Manometric studies for assessing the lower esophageal sphincter.

Complications :

1- Acid aspiration resulting in pulmonary injury { can cause death and this contributes to sudden infant death syndrome }
2- Development of Barrett´s esophagus (the normal squamous mucosa of the esophagus is replaced by columnar epithelium) due to long-term reflux .
3- adenocarcinoma .

Treatment :

1- Lifestyle :

- Encourage weight loss
إنقاص الوزن
- Raise bed head رفع رأس السرير
- Eating a greater number of smaller meals rather than three large meals,
أكل عدد كبير من الوجبات الصغيرة أفضل من ثلاث وجبات
- Erect position after eating .
البقاء فى وضع منتصب بعد الأكل
- Avoidance of tight girdles & belts .
تجنب الكورسيهات و الأحزمة المشدودة

Avoid : Hot drinks , alcohol , fatty foods , caffeine , and eating < 3 hours before bed . Avoid drugs affecting oesophageal motility (nitrates anticholinergics , tricyclic antidepressants) or that damage the mucosa (NSAID , K+ salts , alendronate).

2- Drugs :

Antacids e.g.

R/ **Mucogel syrup.**

Or : **Epicogel syrup .**

ملعقة بعد الأكل ٣ مرات يوميا

H2-blocker : e.g

R/ **Ranitidine 150 .300 tab .**

Or : **Zantac tab .** 300 mg at bed time .

Or : **Omeprazole cap .**

كبسولة مرتين يوميا

-Prokinetic drug : e.g.

R/ **Primperan tab .**

Or : **Motilium tab.** قرص ٣ مرات يوميا

3-Surgery :

Is not indicated unless symptoms are bad and there is radiological or PH-montoring evidence of severe reflux . NB ; surgery is better than drug at improving asthma .

Gastroenteritis

Gastroenteritis is an inflammation of the gastrointestinal tract (the pathway responsible for digestion that includes the mouth, esophagus, stomach, and intestines).

Causes :

Gastroenteritis can be caused by viral, bacterial, or parasitic infections.

Viral gastroenteritis is highly contagious and is responsible for the majority of outbreaks in developed countries.

Common routes of infection include:

- Food (especially seafood)
- Contaminated water
- Contact with an infected person
- Unwashed hands
- Dirty utensils

In less developed countries, gastroenteritis is more often spread through contaminated food or water.

Symptoms

The main symptom of gastroenteritis is diarrhea. When the colon (large intestine) becomes infected during gastroenteritis, it loses its ability to retain fluids, which causes the person's feces to become watery. Other symptoms include:

- Abdominal pain or cramping
- Nausea
- Vomiting
- Fever
- Poor feeding (in infants)
- Unintentional weight loss (may be a sign of dehydration)
- Excessive sweating
- Clammy skin
- Muscle pain or joint stiffness
- Incontinence (loss of stool control)

Because of the symptoms of vomiting and diarrhea, people who have gastroenteritis can become dehydrated very quickly. It is very important to watch for signs of dehydration, which include:

- Extreme thirst
- Urine that is darker in color
- Dry skin
- Dry mouth
- Sunken cheeks or eyes
- In infants, dry diapers (for more than 4-6 hours)

Diagnosis

- Rectal or abdominal examination to exclude the possibilities of inflammatory bowel disease (e.g., Crohn's disease) and pelvic abscesses (pockets of pus).

- Stool culture (a laboratory test to identify bacteria and other organisms from a sample of feces) can be used to determine the specific virus or germ that is causing gastroenteritis.

Other diseases that could cause diarrhea and vomiting are pneumonia, septicemia (a disease caused by toxic bacteria in the bloodstream), urinary tract infection, and meningitis (an infection that causes inflammation of the membranes of the spinal cord or brain). Also, conditions that require surgery, such as appendicitis (an inflammation of the appendix), intussusception (a condition in which the intestine folds into itself, causing blockage) and Hirschsprung's disease (a condition where nerve cells in the intestinal walls do not develop properly) can cause symptoms similar to gastroenteritis.

Treatment

In adults :

- Replacement of fluids and electrolytes that are lost because of the diarrhea and vomiting.

- إعطاء أطعمة مسلوقة و عصائر و دجاج و شوربة خضار و سوائل بكثرة لكى تعوض السوائل المفقودة

- In case of dehydration :

R / Dextrose 5 % I.V. infusion .
Ringers lactate I.V. infusion .

For infection give antibiotic :

R / Streptophenicol cap.
Or : Neomycin tab. كبسول كل ٦ ساعات

N.B. Antibiotics will not be effective if the cause of gastroenteritis is a viral infection.

Antidiarrheal medications : (e.g., Loperamide)

R/ Immodium Cap.
Or:Lomotil tab.

٢ كبسولة أو قرص فى البداية ثم كبسولة بعد كل مرة إسهال

N.B. Doctors usually do not recommend antidiarrheal medications (e.g., Loperamide) for gastroenteritis because they tend to prolong infection, especially in children.

For vomiting :

R / Cortigen B6 adult amp.
Or : Primepran Amp.

حقنة بالعضل عند اللزوم

Then complete with :
R / Motilium tab.
Or : Primperan tab.

قرص ٣ مرات يوميا قبل الأكل

For colic :

R / Buscopan amp. حقنة بالعضل
Then complete with :
R / Visceralgin tab.

قرص ٣ مرات يوميا

Prevention :

- Washing hands frequently, especially after going to the bathroom and when working with food;
- Cleaning and disinfecting kitchen surfaces, especially when working with raw meat or eggs;
- Keeping raw meat, eggs, and poultry away from foods that are eaten raw
- Drinking bottled water and avoiding ice cubes when traveling

Flatulence

It is the accumulation and production of gas in the gastrointestinal tract giving a distressing feeling of distension & fullness .

Causes :

1- Aerophagia (Air swallowing due to rapid eating)
2- Gaseous food (e.g carbonated drinks)
3- Fermentation .
4- Diverticulitis (alternative diarrhea and constipation) .
5- Bacterial or protozoan bowel infections .
6- Malabsorption .
7- GIT diseases .

Treatment :

Patient education :

- Treat GIT Diseases .
- Avoid rapid eating .
- Avoid drinking gaseous food & much fluids while eating .
- Take adrug e.g.

R / **Disflatyl tab.**
Or : **Faltidyl tab.**
٢قرص مضغ بعد الأكل ٣ مرات يوميا
Or : **Eucarbon tab**
Or : **Ultracarbon tab**
Or : **Neocarbotrina tab**
أقراص فحم : ١-٢ قرص عند الشعور بالإنتفاخ
R/ **Nutrizym tab.**
Or : **Zymogen tab**
Or : **Amerase tab**
Or : Digestin tab
Or : **Digestin syrup .**
Or : **Spasmocanulase tab .**
٢قرص أو ١-٢ ملعقة وسط الأكل ٣ مرات يوميا

Dyspepsia

Abdominal pain made worse by meals .

Causes :

1. Peptic ulcer (epigastric pain, burping, nocturnal)
2. Irritable bowel syn. (abdominal pain, bowel changes)
3. Psychological (secondary to stress)
4. Gastritis (anorexia, nausea, malaise)
5. Duodenitis
6. Oesophagitis (dysphagia, waterbrash)
7. Cholelithiasis
8. Pancreatitis (sweats, nausea, abdo. tender)
9. Gastric carcinoma
10. Food allergy and drug intolerance (eg. NSAIDs)

Treatment : As in flatulence

Pyrosis or Heart Burn (Hyperacidity)

Symptoms: Epigastric or substernal burning pain e.g. In peptic oesophagitis ± Wter brash (Reflux of acid-peptic gastric contents usually at night , on lying flat and following meals) , nausea after meals ± epigastric tenderness .

Causes: 1-Reflux oesophagitis
2-Hiatus hernia
3-Peptic ulcer
4- pregnancy
5-Alcohol abuse

Treatment:

R/ **Glycodal lozeng. Tab.**
قرص استحلاب بعد الأكل
OR / **Mucogel syrup.**
ملعقة ٣ مرات بعد الأكل

Patient Education :

1-Avoid spicy food ,tea and coffee .
2-Stop smoking .
3-Raise head of bed , avoid stooping
4-Avoid nocturnal food and drink , eat small meals . تجنب الاكلات والمشروبات الثقيلة قبل النوم

Constipation الإمساك

It is the infrequent passage of stool or difficulty in defecation with discomfort .

Causes :

Poor diet
Inadequate fluid intake or dehydration
(Immobility (or lack of exercise
Irritable bowel syndrome
Old age
Post-operative pain
Hospital environment (lack of (privacy , having to use a bed pan
Anorectal disease : Anal fissure – . anal stricture – rectal prolapse

Intestinal Obstruction :

Colorectal carcinoma
(Strictures (e.g Crohn´s disease
(Pelvic mass (e.g fetus , firoids
Diverticulosis (rectal bleeding is a (commoner presentation
Congenital abnormalities

Metabolic / endocrine :

Hypothyroidism
Hypercalcemia
Hypokalemia
Prophyria
Lead poisoning

Drugs

Opiate analgesics (e.g morphine , (codeine
Anticholinergics (tricyclics , (phenothiazone
Iron

Neuromuscular (slow transit with ↓ (propulsive activity
Spinal or pelvic nerve injury
Aganglionosis (Hirschsprung´s (disease
Systemic sclerosis
Diabetic neuropathy

Other causes

Chronic laxative abuse (rare- (diarrhoea is commoner
Idiopathic slow transit
Idiopathic megarectum / colon
Psychological (e.g associated (with depression or abuse as achild

Treatment :

.Exclude specific pathological cause -
- Advise exercise
- High fibre, high fluid diet such as vegetables , fruits & bran

Consider drug only if these measures fail , and try to use them for short periods only : often :

Stimulant Laxative

such as senna ,Sulfolax , cascara Bisacodyl & sodium picosulphate present in

R/ **Purgaton tab**
Or : **Sennalax Tab.**
Or : **Mentholax Cap .**
Or : **Diolax tab**
Or : **Abilaxine tab**
Or : **Minalax tab**
Or : **laxin tab**
قرص أو كبسولة ٣ مرات يوميا

R/ **Picolax drops**
Or : **Skilax drops**
Or :**Normalax drops**
Or : **Laxeol-PI drops**
الأطفال : من ٧-١٤ نقطة يوميا
البالغين : من ١٥ – ٢٠ نقطة يوميا

Bulking agents :

(↑ faecal mass so stimulating peristalsis , they must be taken with plenty of fluid ; Such as :
Bran (may hinder absorption of dietary trace elements if taken with every meal) , Ispaghula husk , Psyllium & Calcium ploycarbophil .

R/ **Biolax sachets**
Or : **Agiolax sachets**
كيس على نصف كوب مرتين يوميا

R/Evaculax cap
Or : Evac tab.
٢قرص من ١-٤ مرات يوميا

Stool softeners :
Lubricate and soften impacted faeces
Such as : glycerin present in
R/ Glycerin supp . لبوسة عند اللزوم

Osmotic-acting laxatives : such as
Lactulose :
-Artificial sugar = fructose + Galactose .
-Not digested or absorbed → Osmotic purgative.
-Splited by colonic bacteria→Lactic & others→↓ PH of colon:
- Formation of soft stools .
- Inhibits proteolytic bacteria →↓ Ammonia formation

So used in :
1- Constipations .
2- Hepatic encephalopathy .

R/ Duphlac Syrup .
Or : Laxolac syrup
Or : Sedalac syrup .
١-٢ ملعقة كبيرة ٣ مرات يوميا

N.B) Therapy of hepatic encephalopathy
1- Neomycin → Aminoglycoside bactericidal antibiotic
2- Lactulose → Formation of lactic acid →↓ Ammonia formation .
Both inhibit ammonia forming bacteria

Magnesium salts (mag. Sulphate , mag. Hydroxide)
It is saline purgative acts by osmotic effect e.g
R / Epico salt sachets
Or : Laxel sachets
كيس على نصف كوب ماء قبل الفطار على معدة خاوية

Sorbitol :
R / Importal sachets
كيس على نصف كوب مرة واحدة يوميا

Enemas : حقنة شرجية
Used only as temporary measures in chronic constipation & faecal impaction , e.g .
R/ Warm water enema
Or : Enemax enema (phosphate enema)
Or : Enemacort enema

Diarrhoea الإسهال

-Diarrhea is an abnormal increase in frequency of defecation and looseness of stools (Water contents more than 60 %) .
-Diarrhea may result in extensive electrolytes , fluid loss and dehydration . therefore , patient may experience hypokalemia , hyponatremia and other electrolyte imbalance .

Steatorrhoea : it is the diarrhoea in which the stool´s fat content which is increased .

Etiology :
Acute Diarrhea : (Lasts within 2 weeks)
has three causes :-
A) Infection .
B) Diet .
C) Medication .

A) Infectious diarrhea :
It is caused by : Bacteria , Virus , Parasite .

Mechanism by which organisms may produce diarrhea are :

- Destruction of enteric cells through direct invasion .
- Production of toxins that stimulate fluid and electrolyte secretion , causing watery stools .

1-Bacterial diarrhea :

Its sources are :-

- Ingestion of contaminated food and/ or water .
- Direct oral-fecal transfer (e.g a baby might place fecal-contaminated wearing diaper in his mouth) .
- Also, sexual practice may be a source .

Organisms :

- Salmonella (eggs, beef , milk and poultry)
- Campylobacter jejuni (under cooked chicken)
- E.coli (the most common cause of traveler diarrhea , TD)
- CLostridium difficile
- Staphylococcuss aureus .
- Shigella .
- Yersinia .

2-Parasite-induced diarrhea :

Sources of infection :-

- Contaminated wter with animal or human feces containg the cysts .
- Fecal-oral transmission .

Organisms :

- Giardia lamblia .
- Enatmoeba histolytica .

Symptoms of bacterial and Parasite-induced diarrhea :

Abdominal cramping , *fever* , nausea , vomiting and passage of blood and mucus with stools may be associated .

N.B) Medications that slow peristalsis(anticholinergics , Antihistamincs , loperamide { Immodium } , Opiates) inhibit the elimination of the pathogens , prolong the symptoms and increase the severity of diarrhea .

How to differentiate between bacterial and parasite-induced diarrhea ?

Parasite-induced diarrhea characterized by abdominal cramps , flatulence , anorexia , colored green stool and steatorrhea (Fatty dirrhea) .

The first line for treatment of ***parasite diarrhea***is *metronidazole* present in :

R/-flagyl tab , syrup . Or: Elyzol tab, syrup .

Or : Furazol tab, syrup .

Or : Flagicure tab .

قرص أو ملعقة ٣ مرات يوميا

OR :Tinidazole & Seconidazole present in :

R / Fasigyn tab.

Or : Protozol tab.

Or : Flagentyl tab .

Or : Fladazol Tab .

٤أقراص تؤخذ جرعة واحدة

*Treatment In case of **bacterial diarrhea :***

We give antibiotic like :

R/ Cefotax vial .

Or : Garamycin Amp.

Or : Ceforan vial .

حقنة عضل كل ١٢ ساعة حسب العمر

OR / Ciprofloxacin 500 tab.

Or : Norfloxacin 400 tab.

قرص كل ١٢ ساعة

OR / Entocid tab .
Or : Entocid compound tab .
Or : Streptoquin tab .
Or : Entroquin tab.
Or : Streptophenicol cap .

قرص أو كبسولة ٣ مرات يوميا

± Adsorbent : Which absorb Micro-organism , Toxin & water .
Like : *Kaolin-pectin*
R/ Kapect suspension .
Or : Pectokal syrup .

ملعقة ٣ مرات يوميا

+ Rehydran solution :Like
R/ Rehydran-N Sachets

. كيس على ربع كوب ماء بعد كل مرة إسهال

N.B)

1- Patients with fever must not use antidiarrheals as loperamide { Immodium Cap } & diphenoxylate { Lomotil Tab },as fever indicates the presence of infection .
2- Anti-motility drugs should not be used with infectious diarrhea as they decrease the ability of GIT to get rid of the bacteria or virus .
3- Prescription anticholinergics (e.g. atropine , hyoscyamine) are also used to decrease bowel motility and reduce abdominal cramps . these product are found in combination with adsorbent (e.g. Kaolin-pectin) or opiates **Examples :**

Pectokal-N (Kaolin+pectin+ neomycin+belladona)

Streptoquin (Entocid + homatropine)

Its **adverse effects** include : dry mouth , blurred vision , urine retention , increased intraocular pressure and tachycardia , they are contraindicated in glaucoma , pregnancy , lactation .

3-Viral diarrhea :

Sources of viral infection :

- Fecal-oral transmission . (main source) .
- Contaminated water .

Organisms :

- Rotavirus .
- Norwalk virus .

Symptoms : Vomiting and fever but no blood or mucus in the stools . Dehydration and electrolyte loss usually occur .

Treatment :

Viral diarrhea requires no therapy except electrolyte maintenance and / or replacement .

B) Dietary Diarrhea :

Causes :

- Lactose intolerance .
- Milk intolerance .
- Excessive fiber intake .
- Food allergy .
- Fatty or spicy food .
- Large amount of caffeine .
- Drinking large amount of extremely salty drinks or salted foods can cause osmotic diarrhea .

Treatment : avoid the cause .

C) Medication-Related Diarrhea :

Drugs that can cause diarrhea :

- Antibiotics { e.g. ampicillin , Cephalosporins , Clindamycin , Tetracyclines }
- Antihypertensive .
- Chemotherapeutic agents .
- Colchicine .
- Digitalis .

- NSAIDs
- Potassium
- Propranolol
- Quinidine
- Products caontaining magnesium e.g. antacids and laxatives .

Treatment: Avoid the cause .

Chronic Diarrhea

(lasts more than 2 weeks)

Causes:

-Protozoal organisms .
-Food (e.g. lactose intolerance) .
-Irritable bowel syndrome .
-Malabsorption ; examples :

a. celiac sprue [abnormal structure of small intestine causing gluten intolerance and malabsorption of fat , certain starches and sugar] .
b. Diverticulosis .
c. Short bowel syndrome .

-Inflammatory bowel disease e.g. crohn´s disease
-Pancreatic disease
-hypothyroidism
-AIDS
-Cancer .

Treatment: treat the cause .

Clinical features : It is important to take a detailed history :

Is it acute or chronic ?

-Acute : Suspect gastroenteritis .Ask about travel , change in diet , others affected in household .

-Chronic diarrhea alternating with constipation suggests irritable bowel syndrome .

Anorexia , Weight ↓ , anaemia , or nocturnal diarrhea suggest an organic cause .

Traveler´s Diarrhea :

It is a subcategory of the acute type of infectious diarrhea that occurs due to traveling mainly from developed to less-developed countries .

Treatment :

Treat the cause + Antidiarrheal Like
R/ Lomotil tab .
Or : Immodium cap
٢ قرص أو ٢ كبسولة فى البداية ثم قرص أو كبسولة بعد كل مرة إسهال .

Hiccoughs (Hiccups) الزغطة

It is chronic spasm of diaphragm .

Causes :

- CNS disorders .
- Phrenic nerve irritation from any cause .
- Gastrointestinal disorders (e.g. indigestion) .
- Cardiorespiratory disorders .
- Emotional stress . ....e.t.c

Treatment :

For brief episodes :

1- 1-Divert the patient´s attention by sudden blow from behind .
2- Breath holding , rebreathing air in a closed bag (Co2 inhalations) , swallowing ice water , sudden fright , pulling out tongue , sneezing etc.
3- Stimulation of the nasopharynex by a soft catheter .

For chronic episodes :

Exclude organic cause :

1-sedation : by chlorpromazine orally or IVI .

R/ Largactil 25, 50 mg tab.
Or : Neurazine tab .
Or : Valinil tab.
قرص عند اللزوم

2- Prokinetic drugs :
R/ Primperan 1 amp.
أمبول عضل مرة واحدة
R/ Motelium tab.
قرص ٣ مرات يوميا قبل الأكل بنصف ساعة
3-Antacids may help .
R/ Ranitidine tab .

Surgical measures : Phrenic nerve transection may be indicated in extreme cases that fail to respond to all other measures and are considered to be a threat to life .

Haematemesis & Melaena

Haematemesis : is vomiting of blood , it may be bright or look like coffee grounds . .
Melaena : black , tarry & offensive stools (digested blood).

Causes :

Common
Peptic ulcer
Gastritis/Gastric erosions
Duodenitis
Oesophageal varices
Oesophagitis
Malignancy
Drugs (NSAIDs , steroids , thrombolytics , anticoagulants)
Rare
Bleeding disorders
Portal hypertensive gastropathy
Aorto-enteric fistula

Diagnosis :
1-History and Examination .
2- Endoscopy .

Treatment :
R / Haemokion amp. Or tab.
R / Dicynone amp.
حقنة أو قرص كل ٦ ساعات حتى يتوقف النزيف

+ Treating the causative agent .

Gingivitis & Mouth ulcer (Apophus ulcer)

Painful , red , congested ,swollen , tender gum .
R/ Antiseptol Mouth wash .
Or : Betadine M.W
Or :Tantum M.W
ملعقة على نصف كوب ماء ٣مضمضة مرات يوميا
R/ Salivex-L paint مس ٣ مرات يوميا
R/ Solcoseryl dental past .
Or : Oracure past .
دهان للقرح ٣ مرات يوميا
R/ E-mox 500 cap . كبسولة كل ٦ ساعات

Anorexia

Loss of appetite
R/ Mosegor syrup or tab.
Or : Digestin syrup or tab.
ملعقة أو قرص قبل الأكل ٣ مرات يوميا
R/ Multisanstol with iron syrup .
Or : Tres-orix syrup .
Or : Vitaphos syrup .
Or : Phosphoplex with iron syrup.
ملعقة مرتين يوميا

Vomiting

Causes :
► G.I.T : Gastroenteritis , peptic ulceration , pyloric stenosis ,

intestinal obstruction , paralytic ielus , acute cholecystitis , acute pancreatitis .

►C.N.S : Meningitis / encephalitis , Migraine , ↑Intraocular pressure , Motion sickness , Mènière´s disease , Labyrinthitis .

►Metabolic / Endocrine : Uraemia ,hypercalcaemia , Hyponatraemia , Diabetic ketoacidosis , addison´s disease .

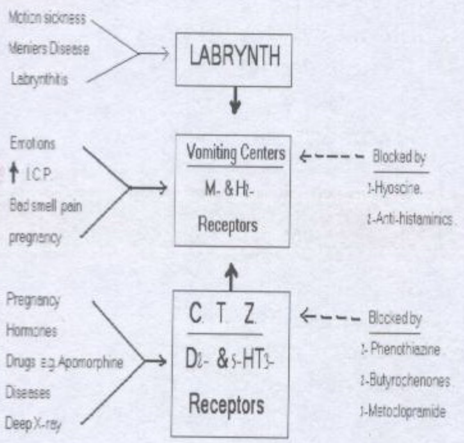
► Pregnancy .

►Psychiatric disorder : Self – induced , psychogenic , bulimia nervosa .

►Drugs : Alcohol , antibiotics , cytotoxics , digoxin , opiates .

►other : Myocardial infarction , Autonomic neuropathy .

►UTI



Treatment :

Anti-Emetics

A) Centrally acting Anti-emetics :

1-Hyoscine : ½ mg ½ before the journey orally .

A. Blocks M-receptors in vomiting center .
B. Effective in ALL vomiting including motion sickness but short acting → Useful in air sickness .

R/ Buscopan tab. قرص عند اللزوم

2-Anti-Histaminics :

A. Block H1-receptor in vomiting center .
B. Effective in all vomiting including motion sickness . Long acting → Useful in sea sickness .

Examples : Dimenhydrinate , Diphenhydramine , Promethazine , Meclizine & Cyclizine .

R/ Dramenex tab .
قرص ٣ مرات يوميا
Or : Navidoxine tab.
Or : Navoproxin tab , Suup .
Or : Dizirest B6 tab.
Or : Ezadoxine tab.
Or : Vomidoxine tab.
Or : Emetrex tab.
قرص قبل النوم يوميا
Or : Vogaline 5 syrup
ملعقة ٣ مرات يوميا

3-Phenothiazines :

a. Block D2-Receptor in CTZ .
b. Effective in all vomiting EXEPT motion sickness .
c. Examples : Chloropromazine . Better avoid during pregnancy → Teratogenic .

R/ Neurazine tab.
Or : Largactil tab.
قرص ٣ مرات يوميا .

4-Butyrophenones :

a. Block D2-Receptor in CTZ .
b. Effective in all vomiting EXEPT motion sickness .
c. Examples : Droperidol & Haloperidol .

R/ Safince tab.

قرص ٢-٣ مرات يوميا

R/ Haldol deconase amp .

5-Metoclopramide (Primperan) :

a-DUAL anti-emetic :

- Centrally Blocks D2-receptor in CTZ .
- Peripherally → ↑ Cholinergic mechanisms →↑Gastric motility →↑Gastric emptying → Prokinetic agent .

b-Effective in all vomiting EXEPT motion sickness .

R/ Primperan tab.

Or : Plasil tab.

R/ Meclopram tab.

قرص قبل الأكل ٣ مرات يوميا

6-Domperidone (Motilium) :

a-Dual anti-emetic :

- Centrally blocks D2-receptor in CTZ .
- Peripherally →α-Blocking activity in stomach → ↑ Gastric motility → Prokinetic agent .

b-Effective in all vomiting EXEPT motion sickness .

R/ Motilium tab.

Or : Motinorm tab.

Or : Synchro-Git tab.

Or : Dompidone tab.

Or: Frcotilium tab.

Or : Domperidone tab.

قرص قبل الأكل بنصف ساعة ٣ مرات يوميا .

6-Pyridoxine (Vit B-6) : Effective in vomiting of pregnancy .

Or : Navidoxine tab.

R/ Navoproxin tab , Susp .

Or : Dizirest B6 tab.

Or : Ezadoxine tab.

Or : Vomidoxine tab.

Or : Emetrex tab.

قرص قبل النوم يوميا

7-Glucocorticoids :

-ACTH , Cortisol & Dexamethasone → used in cancer chemotherapy-induced vomiting .

8-Serotonin 5-HT3-Receptors Antagonist :

a-Examples : Ondansteron (Zofran tab) & Granisteron (Kytril tab) .

b-Used orally & IV mainly in cancer chemotherapy-induced vomiting .

9-Cannabinoids e.g. Nabilone . Used in cancer chemotherapy-induced vomiting .

B) Peripheral Anti-Emetics :

1-Metoclopramide → Cholinergic effect →↑Gastric motility → Prokinetic agent .

2-Domperidone → α-Blocking effect →↑Gastric motility → Prokinetic agent .

3-Denulcents & Local anesthetics : to prevent gastric irritation .

Ulcerative Colitis

What is ulcerative colitis?

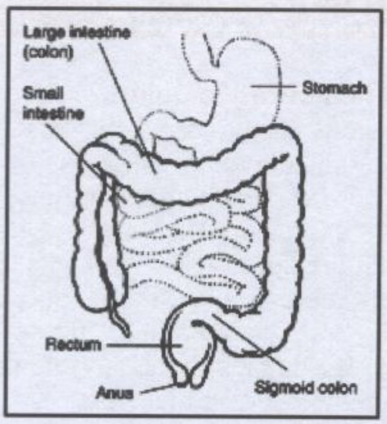
Ulcerative colitis is a disease that causes inflammation and sores, called ulcers, in the lining of the rectum and colon. Ulcers form where inflammation has killed the cells that usually line the colon, then bleed and produce pus. Inflammation in the colon also causes the colon to empty frequently, causing diarrhea.

When the inflammation occurs in the rectum and lower part of the colon it

is called ulcerative proctitis. If the entire colon is affected it is called pancolitis. If only the left side of the colon is affected it is called limited or distal colitis

Ulcerative colitis is an inflammatory bowel disease (IBD), the general name for diseases that cause inflammation in the small intestine and colon. It can be difficult to diagnose because its symptoms are similar to other intestinal disorders and to another type of IBD called Crohn's disease. Crohn's disease differs because it causes inflammation deeper within the intestinal wall and can occur in other parts of the digestive system including the small intestine, mouth, esophagus, and stomach.

Ulcerative colitis can occur in people of any age, but it usually starts between the ages of 15 and 30, and less frequently between 50 and 70 years of age. It affects men and women equally and appears to run in families .



Symptoms :

The most common symptoms of ulcerative colitis are abdominal pain and bloody diarrhea. Patients also may experience

- anemia
- fatigue
- weight loss
- loss of appetite
- rectal bleeding
- loss of body fluids and nutrients
- skin lesions
- joint pain
- growth failure (specifically in children)

About half of the people diagnosed with ulcerative colitis have mild symptoms. Others suffer frequent fevers, bloody diarrhea, nausea, and severe abdominal cramps

Complications :

Ulcerative colitis may also cause problems such as arthritis, inflammation of the eye, liver disease, and osteoporosis. Scientists think these complications may be the result of inflammation triggered by the immune system.

Causes :

People with ulcerative colitis have abnormalities of the immune system, but doctors do not know whether these abnormalities are a cause or a result of the disease. The body's immune system is believed to react abnormally to the bacteria in the digestive tract.

Ulcerative colitis is not caused by emotional distress or sensitivity to certain foods or food products, but

these factors may trigger symptoms in some people.

Diagnosis

- Blood tests to check for anemia, which could indicate bleeding in the colon or rectum, or they may uncover a high white blood cell count, which is a sign of inflammation somewhere in the body.

- A stool sample can also reveal white blood cells, whose presence indicates ulcerative colitis or inflammatory disease. In addition, to detect bleeding or infection in the colon or rectum caused by bacteria, a virus, or parasites.

- A colonoscopy or sigmoidoscopy are the most accurate methods for making a diagnosis of ulcerative colitis and ruling-out other possible conditions, such as Crohn's disease, diverticular disease, or cancer. For both tests, the doctor inserts an endoscope—a long, flexible, lighted tube connected to a computer and TV monitor—into the anus to see the inside of the colon and rectum. The doctor will be able to see any inflammation, bleeding, or ulcers on the colon wall. During the exam, the doctor may do a biopsy, which involves taking a sample of tissue from the lining of the colon to view with a microscope.

- Sometimes x rays such as a barium enema or CT scans are also used to diagnose ulcerative colitis or its complications.

Treatment

- راحة تامة + وجبات خفيفة قليلة النفايات + تجنب اللبن ومنتجاته

Drug Therapy

- Aminosalicylates, drugs that contain 5-aminosalicyclic acid (5-ASA), help control inflammation. Sulfasalazine is a combination of sulfapyridine and 5-ASA. The sulfapyridine component carries the anti-inflammatory 5-ASA to the intestine. Other 5-ASA agents, such as olsalazine, mesalamine, and balsalazide, have a different carrier, fewer side effects, and may be used by people who cannot take sulfasalazine.

R / Colopyrine 500 mg tab .
or : Salazoyrin tab.
٢-٤ أقراص ٤ مرات يوميا لمدة أسبوع ثم
قرص ٤ مرات يوميا لمدة ٦ شهور

- Corticosteroids such as prednisone, methylprednisone, and hydrocortisone also reduce inflammation. They may be used by people who have moderate to severe ulcerative colitis or who do not respond to 5-ASA drugs. Corticosteroids .

R / Deltacortril Tab.
Or : Hostacortin H tab.
١-٢ قرص كل ٦ ساعات تخفض تدريجيا

Or:Hydrocortisone I.V. infusion .
يعطى يوميا بالوريد بالنقط يوميا لمدة أسبوعين

- Immunomodulators such as azathioprine and 6-mercapto-purine (6-MP) reduce inflammation by affecting the immune system. These drugs are used for patients who have not responded to 5-ASAs or corticosteroids or who are dependent on corticosteroids.

R / Imuran 50 mg tab.

- Other drugs may be given to relax the patient or to relieve pain, diarrhea, or infection.

R / Valinil tab. قرص ٣ مرات يوميا

Hospitalization

Occasionally, symptoms are severe enough that a person must be hospitalized. For example, a person may have severe bleeding or severe diarrhea that causes dehydration. In such cases the doctor will try to stop diarrhea and loss of blood, fluids, and mineral salts. The patient may need a special diet, feeding through a vein, medications, or sometimes surgery.

Surgery

Sometimes the doctor will recommend removing the colon if medical Treatment fails or if the side effects of corticosteroids or other drugs threaten the patient's health.

Surgery to remove the colon and rectum, known as proctocolectomy, is followed by one of the following:

- Ileostomy, in which the surgeon creates a small opening in the abdomen, called a stoma, and attaches the end of the small intestine, called the ileum, to it. Waste will travel through the small intestine and exit the body through the stoma. The stoma is about the size of a quarter and is usually located in the lower right part of the abdomen near the beltline. A pouch is worn over the opening to collect waste, and the patient empties the pouch as needed.

- Ileoanal anastomosis, In this operation, the surgeon removes the colon and the inside of the rectum, leaving the outer muscles of the rectum. The surgeon then attaches the ileum to the inside of the rectum and the anus, creating a pouch. Waste is stored in the pouch and passes through the anus in the usual manner.

Irritable bowel syndrome (IBS)
(Spastic colon)

Central or lower abdominal pain relieved by defecation , abdominal bloating , altered bowel habit (Constipation alternating with diarrhea) , tenesmus , passage of mucus .
Symptoms are chronic and exacerbated by stress , menstruation , or gastroenteritis .

Treatment :

-Antispasmodic drugs :

R/ Duspatalin tab.
Or : Colospasmin tab.
Or : Librax tab.
Or : Spasmocanulae tab.
Or : Dogmatil Cap.
قرص أو كبسولة قبل الأكل بربع ساعة ٣ مرات يوميا
R/ Valinil tab.
Or : Xanax tab. قرص مرتين يوميا

R/ Disflatyl tab. ٢قرص مضغ للإنتفاخ

-For Constipation :
R/ Lactulose syrup .
Or : Duphalac syrup .
Or : Sedalac syrup .
ملعقة مرتين يوميا

For diarrhea : -
R/ Immodium cap .
R / Lomotil tab.
قرص أو كبسولة مرتين يوميا

(N.B)

تناول وجبات خفيفة -
الإمتناع عن الأطعمة التى تسبب إنتفاخ مثل : الفول -
- الطعمية – العدس – البقوليات – الأطعمة الحريفة
. – المسبكات

N.B)
Differential diagnosis of ulcerative colitis , Crohn's disease , Irritable bowel syndrome & Amoebic :

Findings	IBD	Amoebic Colitis	Irritable Bowel syndrome
Intestinal manifestation			
Abdominal pain	++	++	++
Diarrhea	++	+	±
Bloody stools	++	±	-
Extraintestinal Manifestations			
Weight loss	+	±	±
Anaemia	+	-	-
Fever	±	-	-
Arthralgia	±	-	-

NB : IBD = idiopathic inflammatory bowel disease

Acute & chronic cholecystitis

Diagnosis :

-Acute : Pain in right hypochondrium + fever + Tachycardia + Vomiting ± Jaundice + Tenderness + Rigidity + Leucocytosis .

-Chronic : Pain ± Biliary colic + Nausea & vomiting + Constipation + Water-brash + Positive Murphy´s sign .

Examination :

- Involuntary muscle spasm R.U.Q. jaundice in 20 % only .
- Murphy´s sign : + ve inspiratory arrest when the patient takes his breath while gently pressing the R.U.Q.
- Palpable G.B. fundus in 35 % of cases .

Investigation :

1. Leucocytosis .
2. Minor increase of plasma transaminases and amylase .
3. Sometimes Minor increase in serum bilirubin .
4. Plain X-ray : upper abdomen :stones in 20% .
5. Abdominal sonography : Gall stones in 75% .

6. Cholescintigraphy shows cystic duct obstruction .

Treatment :

1- Bed rest .

2-Relief of pain

R/ Morphine 10 mg & 20 mg amp.
(For severe pain) I.M
+ R/Atropine amp . 0.6 mg I.M (To relieve the increased tone of choledochal sphincter induced by morphines .

For Moderate pain

R/ Pethidine 100 mg amp .
Or : Tramal Amp .
أمبول بالعضل عند اللزوم
R/ Rowachol cap.
كبسولة قبل الأكل بنصف ساعة ٣-٤ مرات يوميا

3-Nasogastric aspiration when there is perisitent vomiting .Fluids must be given I.V

4- Systemic Antibiotic :

R/ Cefotax 1 gm vials .
Or : Zinnat vial
حقنة بالوريد كل ٨-١٢ ساعة
+ R/ flagyl infusion . 1 gm/8 hours I.V

N.B : Indications of cholecystectomy :
-Failure of medical Treatment after 6 months .
-presence of stones .
- Complications e.g. perforation .

Crohn's Disease (Ileitis or enteritis)

What is Crohn's disease?

Crohn's disease is an ongoing disorder that causes inflammation of the digestive tract, also referred to as the gastrointestinal (GI) tract. Crohn's disease can affect any area of the GI tract, from the mouth to the anus, but it most commonly affects the lower part of the small intestine, called the ileum. The swelling extends deep into the lining of the affected organ. The swelling can cause pain and can make the intestines empty frequently, resulting in diarrhea.

Crohn's disease is an inflammatory bowel disease, the general name for diseases that cause swelling in the intestines. Because the symptoms of Crohn's disease are similar to other intestinal disorders, such as irritable bowel syndrome and ulcerative colitis, it can be difficult to diagnose.

Ulcerative colitis causes inflammation and ulcers in the top layer of the lining of the large intestine. In Crohn's disease, all layers of the intestine may be involved, and normal healthy bowel can be found between sections of diseased bowel.

Crohn's disease affects men and women equally and seems to run in some families. Crohn's disease can occur in people of all age groups, but it is more often diagnosed in people between the ages of 20 and 30.

Causes :

The most popular theory is that the body's immune system reacts abnormally in people with Crohn's disease, mistaking bacteria, foods, and other substances for being foreign. The immune system's response is to attack these "invaders." During this process, white blood cells accumulate in the lining of the intestines, producing chronic

inflammation, which leads to ulcerations and bowel injury.

Research shows that the inflammation seen in the GI tract of people with Crohn's disease involves several factors: ☞ the genes the patient has inherited, ☞ the immune system itself, ☞ and the environment. Foreign substances, also referred to as antigens, are found in the environment. One possible cause for inflammation may be the body's reaction to these antigens, or that the antigens themselves are the cause for the inflammation.

✎ Some scientists think that a protein produced by the immune system, called anti-tumor necrosis factor (TNF), may be a possible cause for the inflammation associated with Crohn's disease.

Symptoms :

Abdominal pain, often in the lower right area, and diarrhea. Rectal bleeding, weight loss, arthritis, skin problems, and fever may also occur. Bleeding may be serious and persistent, leading to anemia.

Diagnosis :

- Blood picture : to check for anemia, which could indicate bleeding in the intestines.

- X-ray (Barium meal follow-through and Barium enema) . For this test, the person drinks barium, a chalky solution that coats the lining of the small intestine, before x rays are taken. The barium shows up white on x-ray film, revealing inflammation or other abnormalities in the intestine.

- Sigmoidoscopy or a colonoscopy. For visual examination of the colon . For both of these tests, the doctor inserts a long, flexible, lighted tube linked to a computer and TV monitor into the anus. A sigmoidoscopy allows the doctor to examine the lining of the lower part of the large intestine, while a colonoscopy allows the doctor to examine the lining of the entire large intestine. The doctor will be able to see any inflammation or bleeding during either of these exams, although a colonoscopy is usually a better test because the doctor can see the entire large intestine.

- Rectal biopsy, which involves taking a sample of tissue from the lining of the intestine to view with a microscope.

Treatment

Drug Therapy

- Anti-Inflammation Drugs :
Sulfasalazine is the most commonly used of these drugs.
R / Salazopyrine 0.5 mg tab.
٤أقراص مرتين يوميا
Or : Pentasa tab.

- Cortisone or Steroids :
R / Hostacortin H(prednisone) 5 mg tab.
٤أقراص ٤ مرات يوميا لمدة ١-٢ اسبوع ثم ١-٢ قرص مرتين يوميا لمدة ٤- ٦ أسابيع ثم يوقف تدريجيا

- Immune System Suppressors. Most commonly prescribed are 6-mercaptopurine or a related drug, azathioprine. Immunosuppressive agents work by blocking the immune

reaction that contributes to inflammation.

R / **Imuran 50 mg. tab.**

٢ مجم / كجم / يوميا

- Antibiotics. Antibiotics are used to treat bacterial overgrowth in the small intestine caused by stricture, fistulas, or prior surgery.e.g ampicillin, sulfonamide, cephalosporin, tetracycline, or metronidazole.

R / **Flagyl 500 mg Bottle** .

مرتين يوميا بالتنقيط الوريدى

- Anti-Diarrheal and Fluid Replacements Several antidiarrheal agents could be used, including diphenoxylate, loperamide, and codeine. Patients who are dehydrated because of diarrhea will be treated with fluids and electrolytes.

R / **Lomotil tab.**

Or : **Immodium cap.** ٢كبسولة عند اللزوم لمدة ٢-٣ ايام

Nutrition Supplementation

- High protein , high energy , low fat , milk free and low-residue diet .
- Parentral nutrition may be required in very severe cases .

Surgery

Surgery becomes necessary when medications can no longer control symptoms. Surgery is used either to relieve symptoms that do not respond to medical therapy or to correct complications such as blockage, perforation, abscess, or bleeding in the intestine. Surgery to remove part of the intestine can help people with Crohn's disease, but it is not a cure. Surgery does not eliminate the disease, and it is not uncommon for people with Crohn's Disease to have more than one operation, as inflammation tends to return to the area next to where the diseased intestine was removed.

Some people who have Crohn's disease in the large intestine need to have their entire colon removed in an operation called a colectomy. A small opening is made in the front of the abdominal wall, and the tip of the ileum, which is located at the end of the small intestine, is brought to the skin's surface. This opening, called a stoma, is where waste exits the body. The stoma is about the size of a quarter and is usually located in the right lower part of the abdomen near the beltline. A pouch is worn over the opening to collect waste, and the patient empties the pouch as needed. The majority of colectomy patients go on to live normal, active lives.

Sometimes only the diseased section of intestine is removed and no stoma is needed. In this operation, the intestine is cut above and below the diseased area and reconnected.

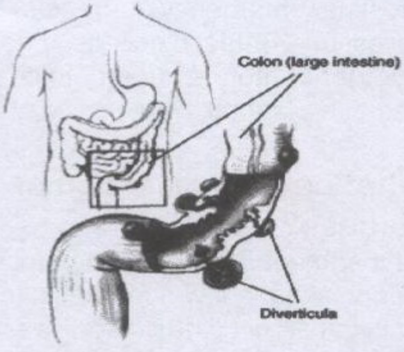
Because Crohn's disease often recurs after surgery, people considering it should carefully weigh its benefits and risks compared with other Treatments.

Diverticulosis and Diverticulitis

What are diverticulosis and diverticulitis?

Many people have small pouches أكياس in their colons that bulge تبرز outward through weak spots, like an inner tube that pokes through weak places in a tire. Each pouch is called a diverticulum. Pouches (plural) are called diverticula. The condition of having diverticula is called diverticulosis. The condition becomes more common as people age. About half of all people over the age of 60 have diverticulosis.

When the pouches become infected or inflamed, the condition is called diverticulitis. This happens in 10 to 25 percent of people with diverticulosis. Diverticulosis and diverticulitis are also called diverticular disease.



What are the symptoms?

Diverticulosis

Most people with diverticulosis do not have any discomfort or symptoms. However, symptoms may include mild cramps, bloating, and constipation. Other diseases such as irritable bowel syndrome (IBS) and stomach ulcers cause similar problems, so these symptoms do not always mean a person has diverticulosis.

Diverticulitis

The most common symptom of diverticulitis is abdominal pain. The most common sign is tenderness around the left side of the lower abdomen. If infection is the cause, fever, nausea, vomiting, chills, cramping, and constipation may occur as well. The severity of symptoms depends on the extent of the infection and complications.

What are the complications?

Diverticulitis can lead to bleeding, infections, perforations or tears, or blockages. These complications always require Treatment to prevent them from progressing and causing serious illness.

Bleeding

Bleeding from diverticula is a rare complication. When diverticula bleed, blood may appear in the toilet or in stool. Bleeding can be severe, but it may stop by itself and not require Treatment. Doctors believe bleeding diverticula are caused by a small blood vessel in a diverticulum that weakens and finally bursts. If the bleeding does not stop, surgery may be necessary.

Abscess, Perforation, and Peritonitis

The infection causing diverticulitis often clears up after a few days of Treatment with antibiotics. If the

condition gets worse, an abscess may form in the colon.

An abscess is an infected area with pus that may cause swelling and destroy tissue. Sometimes the infected diverticula may develop small holes, called perforations. These perforations allow pus to leak out of the colon into the abdominal area. If the abscess is small and remains in the colon, it may clear up after Treatment with antibiotics. If the abscess does not clear up with antibiotics, the doctor may need to drain it.

To drain the abscess, the doctor uses a needle and a small tube called a catheter. The doctor inserts the needle through the skin and drains the fluid through the catheter. This procedure is called percutaneous catheter drainage. Sometimes surgery is needed to clean the abscess and, if necessary, remove part of the colon.

A large abscess can become a serious problem if the infection leaks out and contaminates areas outside the colon. Infection that spreads into the abdominal cavity is called peritonitis. Peritonitis requires immediate surgery to clean the abdominal cavity and remove the damaged part of the colon. Without surgery, peritonitis can be fatal.

Fistula

A fistula is an abnormal connection of tissue between two organs or between an organ and the skin. When damaged tissues come into contact with each other during infection, they sometimes stick together. If they heal that way, a fistula forms. When diverticulitis-related infection spreads outside the colon, the colon's tissue may stick to nearby tissues. The organs usually involved are the bladder, small intestine, and skin.

The most common type of fistula occurs between the bladder and the colon. It affects men more than women. This type of fistula can result in a severe, long-lasting infection of the urinary tract. The problem can be corrected with surgery to remove the fistula and the affected part of the colon.

Intestinal Obstruction

The scarring caused by infection may cause partial or total blockage of the large intestine. When this happens, the colon is unable to move bowel contents normally. When the obstruction totally blocks the intestine, emergency surgery is necessary. Partial blockage is not an emergency, so the surgery to correct it can be planned.

What causes diverticular disease?

Although not proven, the dominant theory is that a low-fiber diet is the main cause of diverticular disease. Fiber is the part of fruits, vegetables, and grains that the body cannot digest. Some fiber dissolves easily in water (soluble fiber). It takes on a soft, jelly-like texture in the intestines. Some fiber passes almost unchanged through the intestines (insoluble fiber). Both kinds of fiber help make

stools soft and easy to pass. Fiber also prevents constipation.

Constipation makes the muscles strain to move stool that is too hard. It is the main cause of increased pressure in the colon. This excess pressure might cause the weak spots in the colon to bulge out تبرز أو تصبح نتوء and become diverticula.

Diverticulitis occurs when diverticula become infected or inflamed. Doctors are not certain what causes the infection. It may begin when stool or bacteria are caught in the diverticula. An attack of diverticulitis can develop suddenly and without warning.

Diagnosis

- Medical history : the doctor may ask about bowel habits, symptoms, pain, diet, and medications.
- Physical exam :

▪ Digital rectal exam. a gloved, lubricated finger is inserted into the rectum to detect tenderness, blockage, or blood. checking stool for signs of bleeding .

▪ Blood test for signs of infection.

▪ x rays or other tests.

Treatment :

A high-fiber diet and, occasionally, mild pain medications will help relieve symptoms in most cases. Sometimes an attack of diverticulitis is serious enough to require a hospital stay and possibly surgery.

Diverticulosis

Increasing the amount of fiber in the diet may reduce symptoms of diverticulosis and prevent complications such as diverticulitis. Fiber keeps stool soft and lowers pressure inside the colon so that bowel contents can move through easily.

-patient can increase his fiber intake by eating these foods: whole grain breads and cereals; fruit like apples and peaches; vegetables like broccoli, cabbage, spinach, carrots, asparagus, and squash; and starchy vegetables like kidney beans and lima beans.

- الأطعمة التى تحتوى على ألياف : الفاكهة مثل : التفاح و الخوخ و الكمثرى و اليوسفى
و الخضروات مثل : القرنبيط – الجزر – الخس – السبانخ – الطماطم – الفاصوليا – البطاطس
بالإضافة إلى العيش أو أدوية تحتوى على نسبة ألياف عالية مثل أقراص بران

Avoidance of nuts, popcorn, and sunflower, pumpkin, caraway, and sesame seeds has been recommended by physicians out of fear that food particles could enter, block, or irritate the diverticula. The seeds in tomatoes, zucchini, cucumbers, strawberries, and raspberries, as well as poppy seeds, are generally considered harmless.

Diverticulitis

Treatment for diverticulitis focuses on clearing up the infection and inflammation, resting the colon, and preventing or minimizing complications.

- Bed rest .
- liquid diet or I.V. fluids .
- For infection give antibiotic I.V. such as :

R / Claforan 1 gm vial .
بالوريد كل ٦ ساعات
+ R / Flagyl 100 ml vial .
بالوريد كل ٨ ساعات

When is surgery necessary?

If attacks are severe or frequent, the doctor may advise surgery. The surgeon removes the affected part of the colon and joins the remaining sections. This type of surgery, called colon resection, aims to keep attacks from coming back and to prevent complications. The doctor may also recommend surgery for complications of a fistula or intestinal obstruction.

If antibiotics do not correct an attack, emergency surgery may be required. Other reasons for emergency surgery include a large abscess, perforation, peritonitis, or continued bleeding.

Emergency surgery usually involves two operations. The first surgery will clear the infected abdominal cavity and remove part of the colon. Because of infection and sometimes obstruction, it is not safe to rejoin the colon during the first operation. Instead, the surgeon creates a temporary hole, or stoma, in the abdomen. The end of the colon is connected to the hole, a procedure called a colostomy, to allow normal eating and bowel movements. The stool goes into a bag attached to the opening in the abdomen. In the second operation, the surgeon rejoins the ends of the colon.

Acute Viral Hepatitis

Hepatitis is a term indicating inflammation of the liver , may be :

a. Non infectious : (Catarrhal inflammation) .
b. Infections : Caused by bacteria , protozoa or viruses.

Several viruses causes hepatitis e.g. Cytomegalovirus and hepatitis A , B , C , E and D . Recently hepatitis G & H are identified .

Diagnosis :

1-Prodromal Phase (3-4 days) :

- It include chills , headache , malaise and distaste even for previously popular foods and cigarettes .
- Anorexia , nausea , vomiting , diarrhea , and upper abdominal pain may occur .
- Mild pyrexia occurs by the end of this phase .

2-Icteric phase of liver damage (1-4 weeks) :

- Jaundice + Dark urine + Pale stools + yellow sclera
- The prodromal symptoms are improved after the appearance of jaundice .

- Easily palaple and tender liver (In 70 %) .
- Athralgia and pruritus may ocuur specially with HBV .

3-Recovery phase (within 6 months) :

- Recovery from the acute illness occurs after 9 weeks in hepatitis B & C and within 2-3 weeks in case of hepatitis A .
- Full clinical and biochemical recovery usually ocuur within 6 months .

Ivestigation :

A) Biochemical tests :

1- Rise of serum transaminases acitivity (SGOT & SGPT) .
2- Bilirubin and alkaline phosphate are elevated .
3- The prothrombin time may be prolonged in severe hepatitis .
4- The white cell count is normal to low especially in the pre-icteric phase .
5- Large atypical lymphocytes are found in infectious mononucleosis may occasionally be seen .

B) serological test s(by Elisa Or Immunoblotassay) :

- Acute HAV → Anti-HAV IgM positive .
- Acute HBV → ABsAg positive .
  Anti-HBc IgM positive .
- Acute HDV → Anti-HDV IgM positive .
- Acute HEV → Anti-HEV IgM positive
- Acute HCV → Anti-HCV IgM positive (after 2-6 months) .

Prevention :

1-Good sanitation and personal hygiene .

2-Immune globulin .

- The dose for hepatitis A is 0.02 ml / Kg I.M before exposure or during the incubation period .
- The individuals traveling to or residing in endemic region should receive immune globulin within 2 weeks after arrival . The adult dose is 5 ml I.M in prolonged residence , a second dose should be given after 5-6 months .

3- Hepatitis A Vaccine is recently developed .

4- Hepatitis B Immune globulin : It may be protective if given in large doses within 7 days of exposure and again at 30 days .

Dose : Adult dose 0.06 mg / Kg body weight .

N.B) For newborn infants of HBsAg-positive mothers give 0.5 ml shortly after birth .

5- Hepatitis B vaccine : It gives protection at least up to 9 years

Dose : Adult 1 ml initially and 1 ml again at 1 and 6 months newborn & pediatric is one-half the adult dose .

Treatment

No specific treatment available for any form .

1-Supportive measures include :

- Total rest until completely recovered .
- Low protein , high carbohydrates diet .
- Avoid alcohol until 3 months after recovery

- Control vomiting by 10 % glucose I.V.
- Monitor prothrombin time .
- Stop all medication if possible .

2- Drugs :

- Should be avoided because many drugs are metabolized in the liver .
- Interferon in acute hepstitis C decreases the risk of chronic hepatitis C .
- Paracetamol for analgesia , avoid aspirin and NSAIDs .
- No role for corticosteroids in patients with viral hepatitis .
- Human immunoglobulin prophylactic against other forms .

Hepatic encephalopathy (Hepatic coma)

Definition Hepatic encephalopathy is brain and nervous system damage that occurs as a complication of liver disorders. It causes different nervous system symptoms including changes in reflexes, change in consciousness, and behavior changes that can range from mild to severe.

Causes, incidence, and risk factors

Hepatic encephalopathy is caused by disorders affecting the liver. These include disorders that reduce liver function (such as cirrhosis or hepatitis) and conditions where blood circulation does not enter the liver. The exact cause of hepatic encephalopathy is unknown.

However, when the liver cannot properly metabolize and and turn poisons into harmless substances in the body, these poisons build up in the bloodstream. One substance believed to be particularly harmful to the central nervous system is ammonia , which is produced by the body when proteins are digested. Ammonia is normally made harmless by the liver. Many other substances may also accumulate in the body if the liver is not working well. They add to the damage done to the nervous system.

In people with otherwise stable liver disorders, hepatic encephalopathy may be triggered by gastrointestinal bleeding, eating too much protein, infections, renal disease, procedures that bypass blood past the liver, and electrolyte abnormalities (especially a decrease in potassium). A potassium decrease may result from vomiting, or treatments such as paracentesis or taking diuretics ("water pills").

Hepatic encephalopathy may also be triggered by any condition that results in alkalosis , low oxygen levels in the body, use of medications that suppress the central nervous system (such as barbiturates or benzodiazepine tranquilizers), surgery, and sometimes by co-occurring illness.

Disorders that mimic or mask symptoms of hepatic encephalopathy include alcohol intoxication , sedative overdose, complicated alcohol withdrawal , wernicke-korsakoff syndrome ,subdural hematoma , meningitis , and metabolic

abnormalities such as low blood glucose

Hepatic encephalopathy may occur as an acute , potentially reversible disorder or as a chronic, progressive disorder associated with chronic liver disease.

Symptoms

- Changes in mental state, consciousness, behavior, personality
    - Forgetfulness النسيان
    - Confusion , disorientation
    - Delirium
    - Dementia
    - Changes in mood
    - Decreased alertness, daytime sleepiness
    - Decreased responsiveness
    - Coma
- Decreased self-care ability
- Deterioration of handwriting or loss of other small hand movements
- Muscle tremors
- Muscle stiffness
- seizures (rare)
- Speech impairment
- Uncontrollable movement
- Dysfunctional movement
- Agitation

Signs and tests

Neurological symptoms may change. Coarse, "flapping" الخفقان muscle tremor may be observed during voluntary movement, such as when the person attempts to hold the arms out in front of the body .

Mental status examination will be abnormal, particularly cognitive (thinking) tasks such as connecting numbers with lines.

Liver disease may be known or may be suspected, and signs of liver disease such as jaundice (yellow skin and eyes) and ascites (fluid collection in the abdomen) may be noted. Occasionally, there is a characteristic musty odor to the breath and the urine.

Blood tests may be nonspecific, or may show liver failure.

- Blood chemistry may show low albumin , high bilirubin , or other abnormalities.
- Serum ammonia levels are usually high.
- Prothrombin time may be prolonged and not correctable with vitamin K.
- CT scan of the head ay be normal, or may show general atrophy (loss of tissue).
- EEG (a reading of electrical activity in the brain) shows abnormalities.

Treatment

Causes must be identified and treated. Gastrointestinal bleeding must be stopped. The intestines must be emptied of blood. Blood breaks down into protein parts that are converted to ammonia. Treatment of infections, kidney failure, and electrolyte abnormalities (especially potassium) is important.

- Fluid replacement :
Glucose 5% 500 cm / 12 hr &
Ringer's 500cm /24 hrs .

- Liver support :
R / Legalon tab. قرص ٣ مرات يوميا
R / Essential forte (lipotropic agent) cap. كبسولة ٣ مرات يوميا

- patient sould reduce protein in the diet to 20 gm /day to lower ammonia production.

- Lactulose may be given to prevent intestinal bacteria from creating ammonia, and as a laxative to evacuate blood from the intestines.

R / Lactulose Syrup.
Or : Duphlac Syrup.
٢ ملعقة كبيرة مرتين يوميا

Mechanism of action of lactulose :

Lactulose is a synthetic dissacharide which is not hydrolysed in the small intestine and so is not absorbed . In the colon , it is broken by lactobacteria into lactic acid which :

1- Stmulates the bowel movment and exert local osmotic effect in the colon to maintain a volume of fluid in the colon soft stool and diarrhea → ↓ time of contact of food residues with ammonia producing micro-organisms → ↓NH4 production .

2- Marked ↓ PH of the colon which causes :

- *Promotion of the growth of ammonia of non-ammonia producing lactobacteria .*
- *Suppression of growth of ammonia producing microorganisms .*
- *↓ Absorption of toxic nitrogenous compounds → ↓ NH4 production.*
- *Unfavourable environment for salomenlla used in the treatment of chronic salmonellosis which may accompany BHF .*

- Enema in encephalopathy is very essential such as .

R / Enemax enema .
حقنة شرجية عند اللزوم

- intestinal antibiotic such as Neomycin may also be used to reduce ammonia production by intestinal bacteria.

R / Neomycin 500 mg tab.
٢ قرص كل ٦ ساعات

- for bleeding :
R / Konakion 10 mg amp.
حقنة عضل يوميا

-For anerobic bacteria :
R / Amerizole (metronidazole) tab.
Or : Flagyl tab. قرص ٣ مرات يوميا

- Antibiotic for infections :
R /Garamycin(Gentamicin)80mg amp. حقنة بالعضل أو الوريد كل ٨ ساعات

- Diuretics for ascites :
R / Aldactone 100 mg tab.
قرص واحد يوميا

N.B: Avoid potassium –lossing diuretics such as Frusemide & thiazides .

- Vitamines :
R / **Betolvex amp.**
Or : **Depovit amp.**
حقنة بالعضل كل أسبوع

- Corticosteroids in active chronic hepatitis :
R / **Predilone 5 mg tab.**
Or : **Hostacortin tab.**
٤-٦ أقراص تخفض إلى ٢-٣ أقراص بمجرد تحسن الحالة

- for seizures :
R / **Valium 10 mg amp.**
نصف-١أمبول بالوريد ببطء عند اللزوم

Contraindication : Sedatives, tranquilizers, and any other medications that are broken down or released by the liver should be avoided if possible. Medications containing ammonium (including certain antacids) should also be avoided.

- In case of comatosed patient :
→ Insertion of a nasogastric tube & giving fluids & food through it .
→ insertion of folly's catheter & estimation of urine output / 24 hrs .

Obesity

Definition

Obesity is a term used to describe body weight that is much greater than what is considered healthy. There are many ways to determine if a person is obese, but experts believe that a person's body mass index (BMI) is the most accurate measurement of body fat for children and adults.

Adults with a BMI greater than 30 are considered obese. Adults with a BMI between 25 and 29.9 are considered overweight. There are exceptions. For example, an athlete may have a higher BMI but not be overweight.

Nearly two-thirds of the United States population is overweight. Anyone more than 100 pounds overweight is considered morbidly obese.

Considerations

Consuming more calories than body burns leads to being overweight and, eventually, obesity. The body stores unused calories as fat.

Obesity increases a person's risk of illness and death due to diabetes, stroke, heart disease, high blood pressure, high cholesterol, and kidney and gallbladder disease. Obesity may increase the risk for some types of cancer. It is also a risk factor for the development of osteoarthritis and sleep apnea.

Genetic factors play some part in the development of obesity -- children of obese parents are 10 times more likely to be obese than children with parents of normal weight.

Common Causes

- Consumption of more food than the body can use
- Excess alcohol intake
- Sedentary lifestyle

Home Care

Tips for preventing weight gain:

- Avoid foods that are high in fat and sugar.
- Reduce alcohol drinking .
- Avoid stress, frustration الإحباط, and boredom السأم.

Avoid a sedentary lifestyle by increasing activity level:

- Perform aerobic exercise for at least 30 minutes a day, 3 times a week .
- Increase physical activity by walking rather than driving.
- Climb stairs درجات السلم rather than using an elevator المصعد or escalator.

For additional help in losing weight:

- Join a support group. Many people find it easier to follow a diet and exercise program if they join a group of people with similar problems.
- Be sure to set realistic goals for weight loss. A loss of 1 to 2.5 pounds a week may seem slow, but losing weight too fast often does not work. Weight lost quickly usually comes back quickly.

Treatment:

- إتباع نظام رجيم غذائى

- Prescription weight loss drugs are an option for some people. The two main ones are subutramine (Meridia) and orlistat (Xenical).

Sibutramine has anorexigenic effect is mediated by a central serotoninergic mechanism by inhibiting the 5-HT uptake and increasing its release , it increases glucose uptake by skeletal muscle . it lowers plasma triglycerides and produces a fat mobilising effect .

R / Meridia Cap.
Or : Xenical cap. كبسولة قبل الإفطار يوميا

R / Multivitamin cap. كبسولة واحدة يوميا

Multivitamin given due to side effects of sibutramine (Central effect) .

- R / Bran tab.
٣ أقراص قبل الأكل بساعة ٢-٣ مرات يوميا

Bran contain natural fibers when taken with water become bulky & decrease the hungry sensation . When the dose increased the hungry sensation will decreased , because bran is natural so up 12 tablets daily can be used safely .

- R / Chitocal (Chitosan) cap.
١-٢ كبسولة قبل الوجبة الرئيسية او التى تحتوى على نسبة دهون عالية

Chitosan magnetically attract lipids acting like a sponge to prevent absorption of fat from the digestive tract – it affects fat in the stomach before it has the chance to be metabolized acting as a trap that forms a grease ball out of excess fat , then excreted in the stool .

- كما يمكن إستعمال شاى ريجيم أو أقراص خلاصة الشاى الأخضر

R / Green tea tab.

قرص يوميا قبل الإفطار

R / Royal tea sachets .

Surgery

may be an option for those people who are significantly obese (BMI over 35) who can not lose weight using other methods. Weight loss surgery can significantly improve weight and health in the right candidate.

Chapter-5 Ophthalmology

Foreign body in the eye

Diagnosis :

- Sudden pain in the eye .
- Sudden worsening of vision .
- Redness of the eye .
- Examination of the eye .

N.B Alocal anesthetic may be used to lessen the pain & to facilitate the examination .

Treatment :

• Often , the eye will clear itself of an airborne object ; involuntary blinking and tearing will wash the particle out . If these natural mechanisms do not remove the foreign body , follow these emergency steps :

1-Examine the eye by gently pulling the lower lid downward and instructing the person to look upward . Reverse the procedure for the upper lid : hold the upper lid and examine the eye while the person looks downward .
If you find that the foreign object is embedded in the eyeball, cover the eye of the person with asterile pad .

2-If the object is floating in the tear film or surface of the eye , you can remove it manually , while holding the upper or lower lid open , use the corner of a clean cloth to remove the object .

• R/ Chloramphenicol eye drops
قطرة ٤ مرات يوميا

• padding of the eye for 24-48 hrs for protection .

Glaucoma

Definition :

A condition of increased pressure inside the eye (intraocular pressure) , caused when the flow of the fluid within the eye (aqueous humor) is blocked .It can damage the optic nerve and cause vision loss .

Diagnosis :

Rapid onset with severe pain and profound visual loss . Red eye , Steamy cornea and dilated pupil . Physical examination may be non diagnostic . A standard ophthalmic examination may include :

- Visual acuity .
- Refraction reflex response .
- Visual field measurment .
- Intraocular pressure measurment by tonometry .
- Retinal examination .

Treatment :

1-carbonic anhydrase inhibitors :
R/ Diamox 250 Tab.
Or: Cidamax 250 Tab.
Or :Oratrol 50 mg Tab.
قرص ٣مرات يوميا
Or : Trusopt eye drops .
Or :Cosopt eye drops .
Or : Azopt eye drops
Or : Xola eye drops
قطرة ٣ مرات يوميا

R/ Mannitol 250 ml of 50 % solution
May be used as diuretic if necessary .
N.B : Add slow-K Tabs three times daily if diamox is used .

2-Miotics e.g. :
R/ Isopto carpine 2 % eye drops .
Or : Ocucarpine 2 % eye drops .
قطرة ٤مرات يوميا

3-Beta-blockers e.g.:
R/ Timolol 0.5 % eye drops .
Or : Betoptic eye drops
Or : Betagan eye drops .
قطرة مرتين يوميا

4-Sedative & tranquilizers :
R/ Valinil 2 Or 5 mg Tab.
Or : Xanax 0.25 or 0.5 mg Tab
قرص مرتين يوميا

N.B : An iridotomy or Laser therapy may be performed after an acute episode has resolved (to prevent recurrence) or for people with chronic glaucoma that is unresponsive to medical therapy .

Chalazion

Definition :
A lump on the eyelid by a blockage of a small gland that produces part of the tear layer .
It is caused by obstruction of the meibomian (sebaceous) gland duct , it begins with inflammation and tenderness and later forms a cyst-like swelling .

Symptoms :
-Painful swelling on the eyelid .
-Facial swelling
-eye pain
-sensitivity to light .
-Tearing increased .

Treatment :
A chalazion can be treated by applying warm compresses for 10 minutes 4 times a day , this may hasten healing .
Chalazia will often disappear without treatment in a month .If one continues to enlarge , it may need to be surgically removed using local anesthesia .
Antibiotic eye drops are usually used several days before and after removal of the cyst , but are otherwise of little value in treating a chalazion .
R/ Isopto maxitrol eye drops
Or : Gentamytrex eye drops .
قطرة ٤ مرات يوميا

Conjunctivitis (pink eye)

Caused by viral , bacterial , chlamydial , fungal and parasitic agents (rarely) . Other causes are allergies (allergic conjunctivitis) , chemical exposure , certain systemic diseases .

Symptoms :
-Tearing , increased .
-eye pain .
-redness in the eyes .
-gritty feeling in the eyes .
-Itching of the eye .
-Blurred vision .
-sensitivity to light .
-Crusts that from on the eyelid overnight .
Swab of conjunctiva for analysis .

Treament :

Treament of conjunctivitis depends upon the cause .

Allergic conjunctivitis may respond to treatment underlying allergies or may disappear on its own when the causative allergens is removed .

N.B. Cool compresses may be soothing for allergic conjunctivitis .

Antibiotic medication , usually eye drops , is effective for bacterial conjunctivitis .

viral conjunctivitis will disappear on its own .

N.B. The discomfort with viral or bacterial conjunctivitis can be soothed by applying warm Compresses (a clean cloth soaked in warm water) to closed eyes .

R/ Boric acid lotion 2 %

غسول للعين كل ٤ ساعات

R/ Tobrin eye drops .
or : Isopto statrol eye drops
Or : Tobrex eye drops
Or : Oflox eye drops
Or : Fucithalamic eye drops .
Or : Apigent eye drops
Or: polyspectran eye drops .
Or: Miphenicol eye drops

قطرة للعين كل٥ قائق لمدة نصف ساعة ، ثم كل نصف ساعة لمدة ساعتين ، ثم كل ٤ ساعات لمدة ٤٨ ساعة .

R/ Terramycin eye oint .
Or : Terra-cortril eye oint .
Or : fucithalamic eye oint .

مرهم قبل النوم

For childrens :

R/ Erythrocin susp.
Or : Amoxil susp .
Or : Epicocillin susp.

ملعقة كل ٦ ساعات

For adult :

R/ Erythrocin tab.
Or : Amoxil 500 cap.
Or : flumox 500 cap

كبسولة أو قرص كل ٦ ساعات

In case Allergic conjunctivitis : (it may be seasonal)

Use sodium cromoglycate for allergy + removal of allergen .

R/ Epichrom eye drops .
Or : Opticure eye drops
Or : Optichrom eye drops .

قطرة ٤مرات يوميا

R/ Prisoline eye drops
Or : visine AC eye drops .
Or : Naphcon –A eye drops

قطرة ٤مرات يوميا

+ Systemic antihistaminic may be useful .

R/ Mosedin Tab.
Or : Avil retard tab.

قرص قبل النوم

For children :

R/ Mosedin syrup.
Or : Allergyl syrup .

ملعقة قبل النوم

Blepharitis

It is inflammation of the eyelid edges .

Cuases :

Cuased by seborrheic dermatitis , a bacterial infection , or a combination of both , allergies , or infestation with lice (in the eyelashes) .

Blepharitis is characterized by excess oil production in the glands near the eyelid , which creates a favorable environment for growth of bacteria .

Symptoms :

-Crusty and reddened eyelids
- swollen eyelids .
-Itching and burning eyelids
-a regular sensation when blinking

-loss of eyelashes
-eyes , bloodshot
-eye pain .

Treatment :
R/ Blephamide eye drops
قطرة للعين ٤ مرات يوميا
R/ Terr-cortril eye oint . (massage of the eyelid)
تدليك للعين
+ Systemic antibiotic as;
R/ Erythrocin 500 mg cap .
كبسولة كل ٨ ساعات يوميا

- Careful cleansing of the eyelids with a clean lint –free cloth soaked in warm water will help to remove the crusts . Often , a mild baby shampoo can also be used for cleansing .

Corneal abrasion (injury)

It is an injury to the cornea .
Causes :
Caused by a foreign body in the eye , such as sand or metal filings , wearing hard contact lenses for too long , or exposure to Ultraviolet radiation .
Prevention :
Safety goggles should be worn at all times when using power tools , when in contact with chemicals , during high impact sports , or in other situations where there is potential for eye injury . sunglasses designed to screen ultraviolet light should be worn during prolonged exposure to sunlight .

Diagnosis :

- Sensation fo foreign body in the eye .
- Severe pain
- Sowllen eyelids
- The diagnosis confirmed by instillation of sterile fluorescein into the conjuntival sac , the area of corneal abrasions will stain a deeper green than the surounding cornea .

Treatment :
- Removing the foreign material if present .
- Covering the eye with a patch to let the cornea heal itself .

R/ Polyspectran eye drops
قطرة للعين ٤ مرات يوميا
R/ Apigent eye oint . مرهم للعين قبل النوم

Trachoma

Definition : An infectious disease of the eye which , if untreated , leads to blindness .
Causes :
Caused by infection with the organism chlamydia trachomatis .
Symptoms :
- Conjunctivitis .
- Pus-like discharge from the eye .
- Swollen eyelids .
- Swelling of lymph nodes just in front of the ears .
- Cloudy cornea .
- Signs and symptoms :
- Follicular conjunctivitis
- Epithelial keratitis .
- Subepithelial follicles
- Pannus (vascularization and fibrosis of the cornea) .

- Contractures of the lids .
- Eversion of the lids .

Treatment :

1-Topical eye drops :

R/ Dexaron plus eye drops .
Or : Terracortril eye drops
Or : Tobralex eye drops .
Or : Isopto Maxitrol eye drops .
قطرة ٤ مرات يوميا

2-Topical eye oint .

R/ Terramycin eye oint .
Or : Terracortril eye oint .
مرهم قبل النوم

3-Oral antibiotic :

R/ Vibramycin Cap .
كبسولة كل ١٢ ساعة
Or : Erythromycin 250-500 Cap.
كبسول كل ٤ ساعات

+ Improve personal hygiene
+ Adequate follow up and population health education.

Stye (Hordeolum)

Definition : An infection near the root (follicle) of an eyelash .

Causes :

Styes are an infection of the eyelash follicle caused by bacteria . A sore similar to a pimple or a boil froms at the edge of the eyelid .More than 1 stye can occur at one time because the bacteria may spread to another follicle .styes usually develop within a day or 2 and eventually fill with pus then drain spontaneously . A lamp that froms on the eyelid may be a stye or a chalazion .

Prevention :

Wash hands thoroughly after touching boils , acne , or skin infections and before touching the skin around the eye .

Symptoms :

-painful swelling on the eyelid
-Tearing of the eye
-Foreign body sensation
-blurred vision
-small red bump near the eyelashes
-eye pain

Treatment :

- styes can treated by applying warm compresses for 10 minutes , 4 times a day .
- do not attempt to sequeeze the stye ; let it burst on its own .

R/ Isopto statrol eye drops .
Or : Okacin eye drops .
Or : Optectine eye drops
قطرة ٤ مرات يوميا
R/ Terramycin eye oint .
Or : Apigent eye oint .
مرهم قبل النوم
R/ Tetracid cap.
Or : Epicocllin cap
كبسولة كل ٦ ساعات

Cataract (Lens opacity)

Definition A cataract is a cloudy or opaque area (an area patient cannot see through) in the lens of the eye.

Causes, incidence, and risk factors

The lens of the eye is normally clear. If the lens becomes cloudy, the condition is known as a cataract. Rarely, cataracts may be present at or shortly after birth. These are called congenital cataracts.

Adult cataracts usually develop with advancing age and may run in families. Cataracts develop more quickly in the presence of some environmental factors, such as smoking or exposure to other toxic substances. They may develop at any time after an eye injury. Metabolic diseases such as diabetes also greatly increase the risk for cataracts. Certain medications, such as cortisone, can also accelerate cataract formation.

Congenital cataracts may be inherited. The gene for such cataracts is dominant (autosomal dominant inheritance), which means that the defective gene will cause the condition even if only one parent passes it along. I families where one parent carries the gene, there is a 50% chance in every pregnancy that the child will be affected.

Congenital cataracts can also be caused by infections affecting the mother during pregnancy, such as rubella. They are also associated with metabolic disorders such as galactosemia. Risk factors include inherited metabolic diseases, a family history of cataracts, and maternal viral infection during pregnancy.

Adult cataracts are generally associated with aging. They develop slowly and painlessly, and vision in the affected eye or eyes slowly gets worse.

Visual problems may include the following changes:

- Difficulty seeing at night
- Seeing halos around lights
- Being sensitive to glare الوهج

Vision problems associated with cataracts generally move towards decreased vision, even in daylight.

Adult cataracts are classified as immature, mature, and hypermature. A lens that has some remaining clear areas is referred to as an **immature cataract.** A **mature cataract** is completely opaque. A **hypermature cataract** has a liquefied surface that leaks through the capsule, and may cause swelling and irritation of other structures in the eye.

Most people with cataracts have similar changes in both eyes, although one eye may be worse than the other. Many people with this condition have only slight visual changes, and are not aware of their cataracts.

Factors that may contribute to cataract development are low serum calcium levels, diabetes, long-term use of corticosteroids, and various inflammatory and metabolic disorders. Environmental causes include trauma, radiation exposure, and too much exposure to ultraviolet light (sunlight).

In many cases, the cause of cataract is unknown.

Symptoms

- Cloudy, fuzzy, foggy, or filmy vision
- Loss of color intensity
- Frequent changes in eyeglass prescription

- The glare from bright lights causes vision problems at night, especially while driving
- Sensitivity to glare from lamps or the sun
- Halos around lights
- Double vision in one eye
- Decreased contrast sensitivity (the ability to see shades, or shapes against a background)

Signs and tests

- Standard ophthalmic exam, including slit lamp examination
- Ultrasonography of the eye in preparation for cataract surgery

Other tests that may be done (rarely) include:

- Glare test
- Contrast sensitivity test
- Potential vision test
- Specular microscopy of the cornea in preparation for cataract surgery

Treatment

The only treatment for cataract is surgery to remove it. This is done when a person cannot perform normal activities, even with glasses. For some people, changing glasses, getting stronger bifocals, or using a magnifying lens is helpful enough. Others choose to have cataract surgery.

Cataract surgery consists of removing the lens of the eye and replacing it with an artificial lens.

LENS REMOVAL:

There are 2 types of surgery that can be used to remove lenses that have a cataract.

Extracapsular surgery consists of surgically removing the lens, but leaving the back half of the capsule (the outer covering of the lens) whole. High-frequency sound waves (phacoemulsification) may be used to soften the lens to help removing it through a smaller cut.

Intracapsular surgery involves surgically removing the entire lens, including the capsule. Today this procedure is done very rarely.

LENS REPLACEMENT:

People who have cataract surgery are usually fitted with an artificial lens at the same time. The artificial lens is a synthetic (manufactured) disc called an intraocular lens. It is usually placed in the lens capsule inside the eye.

Other options include contact lenses and cataract glasses.

Chapetr-6
Ear , Nose & Throat diseases

Foreign body in the nose

Curious young children may insert small objects into their nose in a normal attempt to explore their own bodies. Potential objects may include food, seeds, dried beans, small toys, crayon pieces قطع طباشير ملونة , erasers الأستيكة, paper wads الحشوات الورقية, cotton and beads.

A foreign body allowed to remain in the nose may lead to irritation and infection. The child may have difficulty breathing.

Symptoms

- foul-smelling or bloody nasal discharge
- difficulty breathing through the affected nostril
- irritation
- sensation of something in the nostril

First Aid : Extraction with a hook by E.N.T specialist .

Otomycosis (Ear fungal infection)

It is the infection of the ear by fungi

Treatment :

R / Dermatin solution .
Or : Canesten solution .
نقط للأذن ٣ مرات يوميا

Epistaxis (Nose bleed)

Definition :

A nosebleed is loss of blood from the mucous membranes that line the nose, most commonly from one nostril only.

Considerations :

Nosebleeds are very common. Most nosebleeds occur because of minor irritations or colds.

The nose has an abundant وفير supply of tiny blood vessels, which makes it easy for the nose to bleed. Air moving through the nose can dry and irritate the membranes lining the inside of the nose. The lining develops crusts that bleed when irritated by rubbing, picking, or blowing the nose.

The lining of the nose is more likely to become dry and irritated from low humidity and dry environment, allergic rhinitis , colds , or sinusitis. A deviated septum, foreign objects in the nose, or other nasal obstruction

may cause also cause nosebleeds. A direct impact to the nose can also cause a nosebleed.

Most nosebleeds occur on the tip of the nasal septum, which contains many fragile, easily damaged blood vessels. More rarely, nosebleeds may occur higher on the septum or deeper in the nose. These higher or deeper nosebleeds may be harder to control.

Occasionally, nosebleeds may indicate other disorders such as bleeding disorders , hypertension , or arteriosclerosis . Hereditary hemorrhagic telangiectasia (also called HHT or Osler-Weber-Rendu syndrome, a disorder involving a vascular growth similar to a birthmark in the back of the nose) may be evidenced by nosebleeds.

Sometimes blood thinners such as Coumadin or aspirin may cause or worsen nosebleeds. Most nosebleeds begin on the septum -- the midline, vertical cartilage that separates the nasal chambers and is lined with fragile blood vessels. This form of nosebleed is not serious, and is usually easy to stop.

Causes

- Sudden trauma to the nose, very cold or very dry air, fragile blood vessels, nasal sprays, strenuous exercise, or picking the nose cause most nosebleeds.
- Recurrent nosebleeds may be a symptom of an underlying disorder such as high blood pressure , taking large doses of aspirin or blood-thinning medication , allergies , a bleeding disorder, or a tumor of the nose or sinuses.
- Most nosebleeds come from blood vessels in the front of the nose. Some are caused by bleeding from the back of the nose into the throat (posterior bleeding) -- these are more difficult to control and almost always require medical attention.

Symptoms

- Bleeding from one or both nostrils.
- Frequent swallowing.
- Sensation of fluid in the back of the nose and throat.

First Aid

Sit down and gently squeeze the soft portion of the nose between thumb and finger (so that the nostrils are closed) for about 5-10 minutes. Lean الميلان forward to avoid swallowing the blood and breathe through mouth. Wait at least 5 minutes before checking if the bleeding has stopped. Almost all nose bleeds can be controlled in this way if sufficient time is allowed for the bleeding to stop.

It may help to apply cold compresses or ice across the bridge of the nose. DO NOT pack the inside of the nose with gauze.

Do Not

Lying down with a nose bleed is not recommended, and patient should avoid sniffing الشَمّ or blowing النَفخ her nose for several hours after a nosebleed.

Medication :

R/ **Epinephrine amp.** (Adrenaline)
فرغ محتويات أمبول واحد على قطعة من القطن
ثم تضع هذه القطنة فى المنخار الذى ينزف

R / **Afrin adult spary** 0.05% (Oxymetazoline) .
بخة للأنف ٤ مرات لمدة يوم واحد

R / **Dafrex 500 mg tab.** (given only in acse of repeated bleeding)
٢قرص كل ١٢ ساعة لمدة أسبوعين

R / **Dicynone amp.**
حقنة عضل حتى توقف النزيف

Note :

- In case of recurrent bleeding due to blood caoillaries weakness → Diosmin 500 mg , dafrex or Ruta c tab. Given 3 times daily , it restore the biological integrity of the capillary endothelium , also it reinforce the tonicity of the walls of the veins .
- If epistaxis due to hypertension we use otrivin only , not epinephrine amp. , because epinpherine may exaggerate hypertension .

Prevention

A cooler house and a vaporizer, to return humidity to the air, help many people with frequent nosebleeds.

Nasal saline spray also can help prevent nosebleeds, especially during the winter months.

Acute Rhinitis

Sneezing may be frequent , headache , wheezing , nasal Congestion, fever, watery discharge or purulent if 2 ry infection .

-rest in bed & giving some drugs like the following :-

1-Antihistaminics ;

R/ **Histazine-1 syrup Or Tab .**
Or ; **Sine up syrup .**
Or : **Claritine syrup or tab.**
Or: **Cetrak syrup Or Tab.**
قرص أو ملعقة ٣ مرات يوميا حسب العمر

2-Anti-Congestant :

R/ **Decongess-SR cap.**
.Or : **Rhinopront cap or syrup**
كبسولة أو ملعقة كل ١٢ ساعة

R/ **Afrin nasal drops .**
. Or : **Iliadin nasal drops**
Or:**Otrivin nasal drops .**
بخة بكل أنف ٣ مرات يوميا

N.B. Nasal drops can be used to relief nasal congestion , but excessive use for long time may leads to dependance & rebound . congestion

3-Antibiotic for secondary infection ;

. R/ **E-mox 500 cap**
. Or : **Flumox 500 cap**
كبسولة كل ٨ ساعات
. Or: **Amoxil 250 syrup**
. Or: **E-mox 250 syrup**
ملعقة كل ٨ ساعات للاطفال

Allergic rhinitis
(Nasal allergy)
or (Hay fever)

Definition

Allergic rhinitis is a collection of symptoms, predominantly in the nose and eyes, caused by airborne particles of dust, dander, or plant pollens حبوب اللقاح in people who are allergic to these substances.

When these symptoms are caused by pollen, the allergic rhinitis is commonly called hay fever.

Causes, incidence, and risk factors

Allergies are caused by an over-sensitive immune response. The immune system normally protects the body against harmful substances such as bacteria and viruses. Allergy symptoms occurs when the immune system reacts to substances (allergens) that are generally harmless and in most people do not cause an immune response.

When a person with allergies breathes in an allergen such as pollen or dust, antibodies are produced. When the antibodies are stimulated by pollen and dust, histamine and other chemicals are released. This causes itching, swelling, and mucus production. Symptoms vary from person to person. Very sensitive individuals can experience hives or other rashes.

Hay fever involves an allergic reaction to pollen. A similar reaction occurs with allergy to mold, animal dander, dust, and similar inhaled allergens.

The pollens that cause hay fever vary from person to person and from region to region.

The amount of pollen in the air can play a role in whether hay fever symptoms develop. Hot, dry, windy days are more likely to have increased amounts of pollen in the air than cool, damp, rainy days when most pollen is washed to the ground.

Some disorders may be associated with allergies. These include eczema and asthma.

Allergies are common. patient genes and environmental may make him more prone to allergies.

Symptoms

- Coughing
- Headache
- Itching nose, mouth, eyes, throat, skin, or any area
- Runny nose
- Problems with smell
- Sneezing
- Stuffy nose (nasal congestion)
- Tearing eyes
- Sore throat
- Wheezing

Signs and tests

- Physical exam : history of symptoms is important in diagnosing

allergic rhinitis, including whether the symptoms vary according to time of day or the season, exposure to pets or other allergens, and diet changes.

Allergy testing may reveal the specific allergens the person is reacting to. Skin testing is the most common method of allergy testing. This may include scratch, patch, or other tests.

Treatment

- The best "treatment" is to let the patient avoid what causes allergic symptoms in the first place. It may be impossible to completely avoid all allergens to which he is sensitive, but he can often takes steps to reduce exposure.

Medication options include the following:

- Short-acting antihistamines :

R / **Claritine tab.** قرص واحد يوميا

- Longer-acting antihistamines

R / **Telfast (fexofenadine) 120 mg or 180 mg. tab.**
Or : **Zyrtec (cetirizine) tab.**
قرص ١-٢ مرة يوميا

- Nasal corticosteroid sprays work very well for people with symptoms not relieved by antihistamines alone.

R / **Flixonase (fluticasone) nasal spray .**
Or : Zalastin (Azelastine) nasal spray .
بخة فى كل أنف مرة واحدة يوميا لمدة شهر

- Decongestants may also be helpful in reducing symptoms such as nasal congestion, but they should not be used for long periods.

R / Rhino pro cap.
كبسولة كل ١٢ ساعة

- Cromolyn sodium for treating hay fever.
  R / **Nasotal nasal spray** .
  Or : **Nazocrom spray .**
  بخة فى كل أنف عند اللزوم
- The leukotriene inhibitor to help control asthma and to help relieve the symptoms of seasonal allergies.
  R / **Singulair** (montelukast) **tab.**
  قرص واحد قبل النوم يوميا

- **Desensitization** may be needed : in which Allergy shots (immunotherapy) are occasionally recommended if the allergen cannot be avoided and symptoms are hard to control. Regular injections of the allergen are given, with each dose slightly larger than the previous dose. Allergy shots keep body from over-reacting to the allergen.

Prevention

Symptoms can sometimes be prevented by avoiding known allergens. During the pollen season, people with hay fever should remain indoors in an air-conditioned atmosphere whenever possible:

- Most trees produce pollen in the spring.

- Grasses الأعشاب usually produce pollen during the late spring and summer.
- Ragweed and other late-blooming plants produce pollen during late summer and early autumn.

For people who are sensitive to certain indoor allergens, dust mite covers for mattresses and pillowcases are recommended, as well as avoiding culprit pets or other triggers.

Meniere's Disease

Meniere's disease is a disorder of the inner ear that causes episodes of vertigo, ringing in the ears (tinnitus), a feeling of fullness or pressure in the ear, and fluctuating hearing loss.

Symptoms

A typical attack of Meniere's disease is preceded by fullness in one ear. Hearing fluctuation or changes in tinnitus may also precede an attack. A Meniere's episode generally involves severe vertigo (spinning), imbalance, nausea and vomiting. The average attack lasts two to four hours. The majority of people with Meniere's disease are over 40 years of age .

A particularly disabling symptom is a sudden fall that may occur without warning.

Causes

An acute attack of Meniere's disease is generally believed to result from fluctuating pressure of the fluid within the inner ear. This is called "hydrops". A system of membranes, called the membranous labyrinth, contains a fluid called endolymph. The membranes can become dilated like a balloon when pressure increases. One way for this to happen is when the drainage system, called the endolymphatic duct or sac is blocked. In some cases, the endolymphatic duct may be obstructed by scar tissue, or may be narrow from birth. In some cases there may be too much fluid secreted by the stria vascularis.

Diagnosis

Diagnosis is based on a combination of the right set of symptoms (usually episodic dizziness and hearing disturbance); hearing tests, which document that hearing is reduced after an attack, The process of diagnosis usually includes hearing testing (audiometry), an ENG test, several blood tests (ANA, FTA), and an MRI scan of the head. Electrocochleography (ECOG) is helpful in difficult cases.

Treatment

At the present time there is no cure for Meniere's disease, but there are ways to manage the condition and control symptoms. Treatment for Meniere's disease falls into the following categories:

- Medication
- Surgery
- Diet

- الحد من تناول السوائل

- Mild Diuretic :

R / Lasix tab.

Or : Moduretic tab.

قرص على الريق يوميا او يوم بعد يوم

- Sedative :

R / Valinil 5 mg. tab. ١-٢ قرص يوميا

- Vestibular suppressants :

R / Stugeron 25 mg tab.

R / Dramamine tab.

قرص ٣ مرات يوميا

- Vasodilator :

R / Trivestal tab.

Or : Betaserc tab.

Or : Ronicol retard tab.

قرص ٣ مرات يوميا

- **Surgery** : If attacks persist or recur repeatedly (saccus decompression , vestibular neurinectomy or destruction of the labyrinth) .

Laryngitis

Definition Laryngitis is an inflammation of the larynx (voice box) generally associated with hoarseness الصوت الأجش or loss of voice.

Causes, incidence, and risk factors

The voice box (larynx) is located at the top of the airway to the lungs, also called the trachea. The larynx contains the vocal cords. When the vocal cords become inflamed or infected, they swell. This can cause hoarseness, and may sometimes block the airway.

The most common form of laryngitis is an infection caused by a virus. It may also be caused by a bacterial infection or a common cold , bronchitis , flu , or pneumonia .

Laryngitis often occurs with an upper respiratory infection and will go away by itself. Common laryngitis is not normally associated with any breathing difficulty.

Several forms of laryngitis occur in children and can lead to dangerous or fatal respiratory blockage. These include croup and epiglottitis.

Other causes of laryngitis include allergies and injury to the area.

Symptoms

- Recent or current upper respiratory infection
- Hoarseness
- Fever
- Swollen lymph nodes or glands in the neck

Signs and tests

Physical examination is usually all that is needed to find out if hoarseness is caused by a respiratory tract infection.

Patients, especially smokers, with lasting hoarseness will need to see an otolaryngologist (ear, nose, and throat doctor) for tests of the throat and upper airway.

Treatment

Because most common laryngitis is caused by a virus, treatment with antibiotics may not help.

Voice rest helps by reducing the inflammation of the vocal cords. A humidifier may soothe the scratchy feeling that comes with laryngitis. Decongestants and pain killers may relieve symptoms of an upper respiratory infection, if present.

In bacterial infection :
R / Ampiclox cap.
Or : Flumox 500 cap.
كبسول كل ٨ ساعات
Decongestant :
R / Sine up tab. قرص ٣ مرات يوميا
Or : Rhino pro cap. كبسولة كل ١٢ ساعة
Pain killer :
R / Paramol tab. قرص ٣ مرات يوميا

sinusitis

Sinusitis is an inflammation (swelling) of the mucous membranes that line the sinus cavities. This can interfere with normal sinus drainage and cause increased mucus production. Untreated and prolonged sinus inflammation can lead to infection and increased symptoms. The drainage from the nose and sinuses is known as post-nasal drip.

Causes

The common cold (viral respiratory illnesses) , allergies and factors in the environment are the most common triggers for the development of sinusitis.

Symptoms

Sinusitis can either be acute or chronic. Acute sinusitis is often caused by a viral respiratory infection that leads to a bacterial infection.The point at which the common cold ends and a sinus infection begins is not always easy to determine.

Symptoms Often Include:

- Pressure in the area of the affected sinus;
- nasal congestion;
- postnasal drip;
- cough;
- sore throat and thick nasal drainage.
- worsening symptoms after 5 to 7 days.

If patient has chronic sinusitis, which is often not associated with an infection, he may experience recurrent or continuing symptoms that do not respond to treatment. These symptoms are more subtle and generally do not include fever. The symptoms of chronic sinusitis may vary greatly and last for months or years if untreated.

Diagnosis

Nasal endoscopy, looking into the nose with a special camera and telescope, may be performed to help confirm the diagnosis. A CT scan of the sinuses is typically not required for acute sinusitis but may be very important in the treatment of patients with chronic sinusitis.

Treatment

Acute Sinusitis :

Analgesic , Antipyretic :

R / **Brufen 400 mg tab.**

قرص ٣ مرات يوميا أو عند اللزوم

Nasal decongestant

R / **Otrivine nasal drops or spray** .

نقط أو بخاخ للأنف ٤ مرات يوميا

R / **Nova-c Tab.** قرص ٣ مرات يوميا

R/ **Alka misr (alkaline nasal wash) eff** .

كيس على كوب ماء مغلى ثم يستنشق البخار الصاعد

Antihistaminic :

R / **Anallerge 4 tab.**

قرص ٣ مرات يوميا

Or : **Claritine tab** . قرص واحد يوميا

Antibiotic for infection :

R / **Rovamycin tab.**

قرص كل ١٢ ساعة

Or : **Flucamox 500 cap.**

كبسولة كل ٨ ساعات

N.B. in severe cases injection antibiotics can be used .

Chronic sinusitis

Mainly surgical but medical treatment may be helpful .

Medication : same as in acute sinusitis + Corticosteriod nasal spray e.g. R / **Flixonase nasal spary** .

بخة كل ١٢ ساعة لمدة أسبوعين

Earwax

The skin of the outer part of the ear canal has special glands that produce earwax. This wax is supposed to trap dust and dirt particles to keep them from reaching the eardrum. Usually the wax accumulates a bit, dries out and then comes tumbling out of the ear, carrying dirt and dust with it. Or it may slowly migrate to the outside where it can be wiped off. The ear canal may be blocked by wax when attempts to clean the ear push wax deeper into the ear canal and cause a blockage. Wax blockage is one of the most common causes of hearing loss.

Symptoms of Wax Buildup :

- partial hearing loss, may be progressive
- tinnitus, noises in the ear
- earache
- fullness in the ear or a sensation the ear is plugged

Treatment :

By using Detergent drops , such as :
R / **hydrogen peroxide or carbamide peroxide** .
OR : **Remowax drops** .

٢ نقطة للأذن ٣ مرات يوميا لمدة ٣ أيام

Or by mechanical removal and suction
Or : By ear wash .

Motion sickness

R / **Sultan cap.**
Or : **Dramenex tab.**
Or : **Stugeron tab.**

قرص ٣ مرات يوميا قبل السفر بنصف ساعة

Notes :

- Sultan= Dramenex contain Diphenhydramine has the general properties of antihistamines , mainly used as antiemetic , and effective inh motion sickness .
- Patient suffering from motion sickness shloud not eat at least 2 hours before journey , to reduce the possibility of nausea & vomiting .

Acute otitis media

Details mentioned before in pediatrics chapter

Treatment

Nasal decongestant :
R / Otrivine drops or Spray .
بخة أو نقطة فى كل أنف ٣ مرات يوميا
Antibiotic :
R / Flumox 500 mg cap.
Or : Augmentin 625 mg or 1 gm. Tab.
قرص ٢-٣ مرات يوميا
R / Viotic ear drops .
نقط للأذن ٣ مرات يوميا
Analgesic :
R / Cetafen tab. قرص ٣ مرات يوميا

SURGERY

If there is fluid in the middle ear and the condition persists, even with antibiotic treatment, a healthcare provider may recommend myringotomy (surgical opening of the eardrum) to relieve pressure and allow drainage of the fluid. This may or may not involve the insertion of tympanostomy tubes (often referred to as ear tubes). In this procedure, a tiny tube is inserted into the eardrum, keeping open a small hole that allows air to get in so fluids can drain more easily down the eustachian tube. Tympanostomy tube insertion is done under general anesthesia. Usually the tubes fall out by themselves. Those that don't may be removed in patient doctor's office.

If the adenoids are enlarged, surgical removal may be considered, especially if patient has chronic, recurrent ear infections. Removing tonsils does not seem to help with ear infections.

Chronic otitis media

Definition Otitis media is an inflammation or infection of the middle ear. Chronic means recurring or persistent.

Causes, incidence, and risk factors

Chronic otitis media occurs when the eustachian tube becomes blocked repeatedly (or remains blocked for long periods) due to allergies, multiple infections, ear trauma, or swelling of the adenoids.

When the middle ear is actually infected with bacteria (or occasionally, viruses) rather than just inflamed, it is more serious. A chronic ear infection may be the result of an acute ear infection that does not clear completely, or the result of recurrent

ear infections. The infection may spread into the mastoid bone behind the ear (mastoiditis), or pressure from fluid build-up may rupture the eardrum or damage the bones of the middle ear.

A chronic ear infection may be more destructive than an acute ear infection because its effects are prolonged or repeated, and it may cause permanent damage to the ear. However, a chronic, long-term infection may show less severe symptoms -- so the infection may remain unnoticed and untreated for a long time.

Symptoms

- Ear pain or discomfort, earache
  - Usually mild
  - May feel like pressure in the ear
- Pus-like drainage from the ear
- Hearing loss

Note: Symptoms may be continuous or intermittent, and may occur in one or both ears.

Signs and tests

An examination of the ear may show dullness, redness, air bubbles, or fluid behind the eardrum. The eardrum may show drainage or perforation (a hole in the eardrum). The eardrum may bulge out or retract inward.

Cultures of drainage may show bacteria. These bacteria may be resistant or harder to treat than the bacteria commonly involved in acute ear infection.

Mastoid x-rays or a CT scan of the head or mastoids may show spreading of the infection beyond the middle ear.

Treatment Antibiotics may be prescribed if the infection appears bacterial. Antibiotic treatment is usually long-term and may be oral or in the form of antibiotic ear drops if there is a hole in the eardrum.

Surgical removal of the adenoids may be necessary to allow the eustachian tube to open. A surgical opening may be made in the eardrum (myringotomy) to allow fluid to drain. This may or may not include placement of drainage tubes in the ear. Surgical repair of a ruptured eardrum may prevent further chronic ear infections.

Keep the ears clean and dry to prevent reinfection. This is particularly important if myringotomy has been performed.

Otitis externa
(Swimmer's ear)

Definition : Inflammation, irritation, or infection of the outer ear and ear canal.

Causes, incidence, and risk factors

Swimmer's ear (otitis externa) is fairly

common, especially among teenagers and young adults. Swimming in polluted water is one way to contract swimmer's ear. The condition also can be caused by scratching (in) the ear or by an object stuck إلتصق in it. Trying to clean wax from the ear canal, especially with cotton swabs or small objects, can irritate or damage the skin.

Swimmer's ear is occasionally associated with middle ear infection (otitis media) or upper respiratory infections such as colds. Moisture in the ear makes the ear susceptible to infection from water-loving bacteria such as Pseudomonas. Other bacteria, and rarely, fungus, can also cause infection.

Symptoms

- Ear pain -- may worsen when pulling the outer ear
- Itching of the ear or ear canal
- Drainage from the ear -- yellow, yellow-green, pus-like, or foul smelling

Signs and tests

When the doctor looks in the ear, it appears red and swollen, including the ear canal. The ear canal may appear eczema-like, with scaly shedding of skin. Touching or moving the outer ear increases the pain. The eardrum طبلة الأذن may be difficult for the doctor to see with an otoscope because of the swollen outer canal. Taking some of the ear's drainage and doing a culture on it may identify bacteria or fungus.

Treatment

- The ear canal should be cleaned of drainage to allow topical medications to work effectively.

Antibiotic :

R / **Viotic ear drops .**

نقط للأذن ٣ – ٤مرات يوميا

Or : **Locacortin vioform drops .**

نقط للأذن ٣-٤ مرات يوميا

Or : **Glycerine icthyol 10% drops .**

توضع النقط على قطعة من القطن ثم توضع داخل الأذن

+ R / **Ampiclox 500 cap.**

Or : **Flumox 500 cap.**

كبسولة كل ٨ ساعات

Analgesic :

R / Brufen tab.

Or : Ponstan forte tab.

قرص ٣ مرات يوميا

Protect ears from further damage. Do not scratch the ears or insert cotton swabs or other objects in the ears. Keep ears clean and dry, and do not let water enter the ears when showering, shampooing, or bathing.

Chapter-7
Cardiovascular Diseses

Hypertension

Diagnosis : hypertension defined as Sustained elevation of blood pressure ≥ 140 / 90

hypertension has two types

1- Primary (Essential) : 95 % of cases , of unknown cause .
2- Secondary : 5 % of cases , of Known cause e.g.
- Renal artery stenosis .
- Pheochromomcytoma .
- Drugs : Corticosteriods , Contraceptives , Clonidine withdrawal & cheese reaction with MAO.I.

Hypertension can be classified according to Diastolic blood pressure (DBP) into 4 degrees

1- Mild ; 90 - 104 mmHg .
2- Moderate : 105 - 114 mmHg .
3- Severe : > 115 mm Hg.
4- Malignant : > 130 mm Hg + Papilledema.

Comments :

1- Hypertension Usually discovered accidentally.
2- Clinically : usually accompanied with headache ± Epistaxis ± Dizziness ± Tinnitus ± Vertigo ± irritability ,fatigue, palpitation + Evidence of left ventricular hypertrophy .
3- loud (high) 2^{nd}. Aortic heart sound.
4- *Complications of Hypertension :* **Cardiac** : Angina pectoris –Left-sided H.F.
Cerebral : Atherosclerosis ⇨ Thrombosis or hemorrhage Hypertensive encephalopathy .
Renal : Chronic renal failure .
Retinal : Sclerosis of arteries + Hemorrhage & exudates .
± Papilloedema (In malignant hypertension) .

One of the following may be a causes of hypertension :

1-Anxiety , exertion .
2- Essential hypertension .
3- Renal diseases .
4- phaeochromocytoma .
5- aortic coarcation .
6-eclampsia of pregnancy .
7- oral contraceptives .
8- cushing syndrome .
9- diabetes mellitus ...etc

Patient Education :

1-withdraw exacerbating drugs (e.g oral contraceptives) .
2- Stop smoking .
3- Reduce alcohol intake .
4- Reduce salt intake .
5- Reduce weight if obese (check cholesterol) .
6- Reduce stress & anxiety (Relaxation technique) .

Groups of anti-hypertensive drugs :

A- Diuretics :

1- 1-Thiazides : Hydrex tab : In elder pt. , Oedema , mild H.F
2- Loop diuretics : Lasix , Edemex , Burinex Tab .
3- Combinations : Lasilactone 50 , 100 , Moduretic , Aldactazide tab

N:B thiazide diuretic contraindicated in D.M. & gout .

B – ACE inhibitors :

Sinopril , Capoten , Capozide , Zestril tab .

N:B used in D.M. & H.F , C/I in renal & artery disease .

C – Ca-channel blockers :

Epilat , Altiazem , Lacipil , Delay-tiazem Cap .

In angina or arrhythmia , not in H.F.

D- beta – blocker :

Tenormin – Ateno or inderal .

N.B : in angina , not in H.F .

Choice of antihypertensive drugs

In young adult :

1st line : (start ing first with) : Diuretics – B-blocker

2nd line : ACEI e.g. Capoten Ca -channel blocker e.g. Epilat .

In old age

1st line : Ca-channel blocker ± Diuretics .

2nd line : ACEI - B- blocker – Alpha – blocker

In case of Heart failure

- Diuretic (e.g lasix – Moduretic) & ACEI (e.g Capoten) .
- Contraindicated in heart failure : Ca-channel blocker e.g. Nefidipin (Epilat) due to –ve inotropic effect . & beta-blocker .

In renal failure :

- Lasix & Epilat - Aldomet .
- Contraindicated in renal failure : thiazide diuretics – ACEI e.g. Capoten .

In Diabetes & Gout :

Avoid thiazide diuretics (side effect hyperglycemia) .

- **In Asthma** : Avoid beta-blocker .

N.B Potassium supplements or amiloride may be needed with diuretics .

In pregnancy

- Avoid diuretics , ACE inhibitors , angiotensin II receptor blockers .
- Drugs with well-identified risks preferred in pregnancy : methyldopa (Aldomet) and hydralazine .

In phaeochromocytoma : use phentolamine (e.g. Rogitine) .

Sumary

Choice of Antihypertensive drugs according to Co-Existing diseases :

Co-disesase	Diuretics	β-blocker	ACEI	CCBs	Others
1-Renal	Frusemide	√	√		
2-Angina & MI		√, But not variant	√, speciall y in MI	√	
3-P.V.D		×	√	√	α-Blockers
4-Asthma	√	×	×	√	
5-DM,Obesity & Dyslipidemia	× , or diazoxide	×	√	√	Weight reduction
6- Pregnancy	×	×	×	Little efficacy	α-methyl-dopa or Hydralazi ne
7-Elderly	First choice	If IHD	If DM	Alternativ e to diuretics & β-blockers	

* Treatment of Hypertension :

I - **Treatment** of <u>cause</u> in secondary hypertension, if possible.

II- **<u>Non-Pharmacologic Therapy</u>** ; (Life style Modifications) :
It should be tried in all patients with mild hypertension before deciding to commence drug therapy .
About 40% of Patients respond to non-drug therapy in the form of ;
↓ Concomitant risk factors :

1- Stop smoking
2- low fat diet .
3- Reduce alcohol & salt intake .
4- increase exercise .
5- Reduce weight if obese .
6- Relaxation therapy (Removal of stress) .

III- **<u>Drug Therapy :</u>**

<u>A) Mild or Moderate Hypertension (DBP 90-114mmHg) ;</u>

1-Start by MONO-therapy : use ONE drug , either :

a. Thiazide Diuretic analogue (Elderly , Heart failure), OR
b. β-Blocker(young,Anxiety,Angina,Tachycardia), O R
c. ACE Inhibitor(High rennin ,Heart Failure , Diabetic Nephropathy) OR
d. Ca++ channel-blocker ;

NB) Thiazide diuretics &/or b-blockers are the most commonly used drugs.

2-Double Therapy , if monotherapy fails , **ADD** a second drug e.g. :

a. Thiazide diuretic + β-Blocker . OR
b. Thiazide diuretic + ACE inhibitor .

3- Triple therapy , if double therapy fails , add a third drug e.g :

- Thiazide diuretic + β-Blocker + VD (e.g. ACE inhibitor or CCB or Hydralazine or Prazosin)

B) Severe Hypertension (DBP > 115 mmHg) :

Start by TRIPPLE therapy :

- Thiazide Diuretic + β-Blocker + VD (see before).

NB) Alternative Choice :

1-In patients with RENAL impairment change thiazide diuretics ➔Loop diuretic .
2-If β-Blocker are contraindicated ➔ α2-agonist e.g. clonidine & α-methyl dopa .

C) Hypertension Resistant to Triple Therapy :

1- Loop diuretic + β-Blocker + Minoxidil .
2- Loop diuretic + ACE inhibitor + Ca++ channel-blocker .

D) Hypertensive Emergencies :

1- Diastolic > 130 mm Hg + Complication (Encephalopathy , Papilledema , Pulmonary edema or Decreased Renal function) :
PARENTERAL Therapy :
((Avoid excessively rapid lowering of BP ⇨ Stroke or Myocardial infarction)).
Na Nitroprusside (IV infusion) , Nitroglycerin (IV infusion) , Loop diuretic (Frusemide IV) , Labetalol (IV bolus injections) , Trimethaphan (IV infusion) , Diazoxide (IV) & Hydralazine (IM or IV)

2- Diastolic > 130 mm Hg & Non-complicated ,
Use vigorous ORAL therapy e.g. Nifedipine , Captopril , Clonidine or

Prazosin .

E) Special Cases of Hypertension :

1- Hypertension + Pregnancy : Methyldopa .
2- Hypertension + COPD : Ca++ antagonist .
3- Hypertension + Diabetic : ACE Inhibitors.
4- Hypertension + Renal failure : ACE Inhibitors.

Hyperlipidemia

Lipid disorders are when there is excess fatty substances in blood. These substances include cholesterol and triglycerides. Having a lipid disorder makes more the patient likely to develop atherosclerosis and heart disease.

Cholesterol can be bound to fat and protein at different densities. Two main types include:

- Low-density lipoproteins (LDL) -- bad cholesterol
- High-density lipoproteins (HDL) -- good cholesterol

In general, LDL should be LOW, and HDL to be HIGH.

Causes

High cholesterol and other lipid disorders can be inherited (genetic) or associated with:

1- Fatty diets
2- Diabetes, hypothyroidism, Cushing's syndrome, and kidney failure
3- Certain medications, including birth control pills, estrogen, corticosteroids, certain diuretics, and beta-blockers
4- Lifestyle factors, including habitual, excessive alcohol use and lack of exercise, leading to obesity.

People who smoke and also have high cholesterol are at even greater risk for heart disease. Lipid disorders are more common in men than women.

Symptoms There are no symptoms.

Signs and tests A fasting lipid test (lipoprotein test) breaks down cholesterol into four groups:

- Total cholesterol
- Low density lipoproteins (LDL) -- bad cholesterol
- High density lipoproteins (HDL) -- good cholesterol
- Triglycerides

In general, a total cholesterol value over 200 mg/dL may indicate a greater risk for heart disease.

How the patient treated also depends on whether patient have any of these

additional risk factors for heart disease:

- Diabetes
- Poorly controlled high blood pressure
- Currently smoke
- Being male and over age 45 or female and over age 55
- Having a first-degree female relative diagnosed with heart disease before age 65 or a first-degree male relative diagnosed before age 55.
- Metabolic syndrome (high triglycerides, low HDL, and obesity)

Treatment

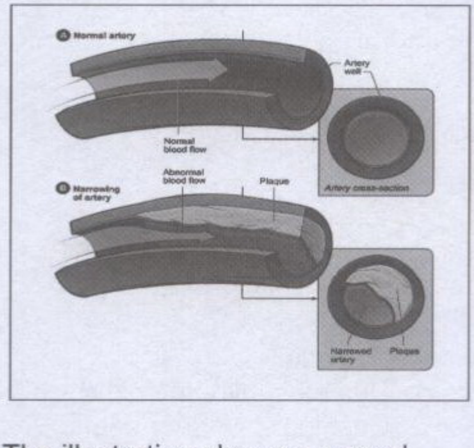
1- Foods low in saturated fat.
2- Exercise regularly.
3- Lose weight if the patient are overweight.
4- Get routine health checkups and cholesterol
5- Some Drugs are better at lowering LDL (bad) cholesterol, some are good at lowering triglycerides, while others help raise HDL (good) cholesterol.
6- The most commonly used drugs for treating high LDL cholesterol are called statins. E.g. (atorvastatin , Simvastatin, ...)Other drugs that may be used include bile acid resins, cholesterol absorption inhibitors, fibrates, and nicotinic acid (niacin).

Atherosclerosis (Peripheral ischemia)

Atherosclerosis is the hardening and narrowing of the arteries. It is caused by the slow buildup of plaque on the inside of walls of the arteries. Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. As it grows, the buildup of plaque narrows the inside of the artery and, in time, may restrict blood flow. There are two types of plaque:

- Hard and stable
- Soft and unstable

Hard plaque causes artery walls to thicken and harden. Soft plaque is more likely to break apart from the walls and enter the bloodstream. This can cause a blood clot that can partially or totally block the flow of blood in the artery. When this happens, the organ supplied by the blocked artery starves for blood and oxygen. The organ's cells may either die or suffer severe damage.



The illustration shows a normal artery with normal blood flow

(Figure A) and an artery containing plaque buildup (Figure B).

Atherosclerosis is a slow, progressive disease that may start in childhood. It can affect the arteries of the brain, heart, kidneys, and the arms and legs. As plaque builds up, it can cause serious diseases and complications. These include:

- Coronary artery disease
  - Angina
  - Heart attack
  - Sudden death
- Cerebrovascular disease
  - Stroke
  - Transient ischemic attack (TIA) or "mini strokes "
- Peripheral arterial disease

Other Names for Atherosclerosis

- Hardening of the arteries
- Arteriosclerosis

What Causes Atherosclerosis?

Scientists don't know exactly how atherosclerosis begins or the exact cause. It is a slow and complex disease that may start in childhood. In some people, atherosclerosis develops faster as they grow older.Scientists think that the buildup of plaque starts when the lining of the artery is damaged or injured.

Who Is At Risk for Atherosclerosis ?

Risk factors that you can't do anything about are:

- Age. As patient get older, his risk increases.
  - In men, risk increases after age 45.
  - In women, risk increases after age 55.
- Family history of early heart disease. risk for atherosclerosis is greater if:
  - father or brother was diagnosed with heart disease before age 55.
  - mother or sister was diagnosed with heart disease before age 65.

Risk factors that you can do something about include:

- High blood cholesterol
- High blood pressure
- Smoking and using tobacco
- Diabetes
- Obesity
- Lack of physical activity

What Are the Signs and Symptoms of Atherosclerosis?

Atherosclerosis usually does not cause symptoms until it:

- Severely narrows an artery
- Totally blocks an artery

Symptoms you may have depend on which arteries are severely narrowed or blocked.

- If the arteries that feed patient heart (coronary arteries) are affected, patient has symptoms of coronary artery disease.
- If the arteries that feed patient brain are affected, patient has symptoms of a stroke or a transient ischemic attack (TIA) or "mini stroke."
- If the arteries that feed patient legs, pelvis, or arms are affected, patient has symptoms of peripheral arterial disease.
- If the arteries that feed patient kidneys are affected, patient has symptoms of renovascular hypertension.

How Is Atherosclerosis Diagnosed?

- health history and risk factors
- family history of atherosclerosis or its complications
- a physical exam
- certain tests to identify atherosclerosis or its complications

The physical exam may include:

- Listening to arteries for an abnormal whooshing الأزيز sound, called a bruit. A bruit can be heard with a stethoscope when placed over the affected artery.
- Checking to see if any of pulses (for example, in the leg or foot) are weak or absent.

Other Tests include:

- Cholesterol levels
- Blood glucose (sugar) level to screen for diabetes
- EKG (electrocardiogram) to measure the rate and regularity of heartbeat and show evidence of a minor heart attack.
- Chest x ray, which provides a picture of the lungs, heart, large arteries, ribs, and the diaphragm.
- Ankle/brachial index, which compares the blood pressure in ankle with the blood pressure in arm.
- Echocardiogram. This test uses sound waves to create a moving picture of heart. Echocardiogram provides information about the size and shape of heart and how well heart chambers and valves are functioning. The test also can identify areas of poor blood flow to the heart, areas of heart muscle that are not contracting normally, and

previous injury to the heart muscle caused by poor blood flow.

- There are several different types of echocardiograms, including a stress echocardiogram. During this test, an echocardiogram is done both before and after heart is stressed either by having exercise or by injecting a medicine into bloodstream that makes heart beat faster and work harder. A stress echocardiogram is usually done to find out if patient have decreased blood flow to his heart (coronary artery disease).
- CT scan , which provides computer-generated images of the heart, brain, or other areas of interest.
- Angiography , a test to look inside arteries to see if there is any blockage and how much. A thin flexible tube is passed through an artery in the upper leg (groin) or in the arm to reach the arteries that may be blocked. A dye that can be seen on x ray is injected into the arteries. Using an x ray, the flow of blood through arteries can be seen .
- Stress Test. Some heart problems are easier to diagnose when heart is working harder and beating faster than when it's at rest. During stress testing, patient exercises (or are given medicine if patient is unable to exercise) to make his heart work harder and beat faster while heart tests are performed.
- During exercise stress testing, his blood pressure and EKG readings are monitored while he walks or runs on a treadmill or pedal a bicycle. Other heart tests, such as nuclear heart scanning or echocardiography, also can be done at the same time. These would be done if more information is needed than the exercise stress test can provide about how well patient heart is working.
- If patient is unable to exercise, a medicine can be injected through an intravenous line (IV) into his bloodstream to make his heart work harder and beat faster, as if patient is exercising on a treadmill or bicycle. Nuclear heart scanning or echocardiography is then usually done.

- During nuclear heart scanning, radioactive tracer is injected into bloodstream, and a special camera shows the flow of blood through heart and arteries.
  Echocardiography uses sound waves to show blood flow through the chambers and valves of the heart and to show the strength of heart muscle.
- two newer tests may be needed along with stress testing if more information is needed about how well patient heart works. These new tests are magnetic resonance imaging (MRI) and positron emission tomography (PET) scanning of the heart. MRI shows detailed images of the structures and beating of the heart, which may help in diagnosis if parts of heart are weak or damaged. PET scanning shows the level of chemical activity in different areas of heart. This can help in determining if enough blood is flowing to the areas of patient heart. A PET scan can show decreased blood flow caused by disease or damaged muscles that may not be detected by other scanning methods.

How Can Atherosclerosis Be Prevented and Delayed?

By controlling risk factors with lifestyle changes and medicines, you may prevent or slow the development of atherosclerosis.

Treatment :

can include:

- **Lifestyle changes**
- **Medicines**
- **Special procedures and surgery**

Lifestyle changes :

- يجب تجنب الأطعمة الغنية بالدهون و الكوليسترول مثل صفار البيض و الكبدة والمخ و السمن و إستعمال زيت الذرة

- الإمتناع عن التدخين .

– تقليل وزن الجسم .

– ممارسة تمارين رياضية للجسم مثل المشى .

Medicines :

- Drugs that Lower cholesterol such as ,

R / Zocor tab.

Or : Lescol tab.

Or : Lipitor tab.

Or : Ator tab.

٢٠ مجم مع العشاء يوميا و يقاس كوليسترول الدم بعد ٤ -٨ أسابيع و يمكن زيادة الجرعة إلى ٤٠ مجم يوميا أو ٢٠ مجم مرتين يوميا حسب حالة المريض .

- Drugs that Lower blood pressure if patient has high blood pressure
- Drugs that Prevent clots from forming in arteries and blocking blood flow (anticoagulants)

R / Persantin 75 mg tab.

١-٢ قرص يوميا

In severe cases :

R / Plavix tab. قرص واحد يوميا

- Stop platelets from clumping together to form clots (antiplatelet medicines such as aspirin)

R / Aspocid inf. Chew. Tab.

Or : Ezacard 75 mg tab.

Or : Aggerex 75 mg tab.

٢ قرص مضغ أو بلع مع الغداء

- Drugs that inhance mental deterioration such as ,

R / Stugron tab .

OR / Vasterel MR tab.

قرص ٢-٣ مرات يوميا

Special procedures and surgery :

Some people may need to have one of the following procedures to treat the complications of atherosclerosis:

- Angioplasty. This procedure is used to open blocked or narrowed coronary arteries. It can improve blood flow to heart, relieve chest pain, and possibly prevent a heart attack. Sometimes a stent دعامة is placed in the artery to keep it propped open after the procedure.
- Coronary artery bypass surgery. This surgery uses arteries or veins from other areas in the body to bypass diseased coronary arteries. It can improve blood flow to the heart, relieve chest pain, and possibly prevent a heart attack.
- Carotid artery surgery. This surgery removes plaque buildup from the carotid artery in the neck. This opens the artery and improves blood flow to the brain.
- Bypass surgery of the leg arteries. This surgery uses a healthy blood vessel to bypass the narrowed or blocked blood vessels. The healthy blood vessel redirects blood around the blocked artery, improving blood flow to the leg.

Hypotension

Causes : due to overdilation of peripheral blood vessels , loss of blood volume or low cardiac output .

Treatment

R/ Fortecortin amp I.M/I.V.

حقنة عضل أو وريد الأن

R/ Effortil drops

١٠ نقط على نصف كوب ماء ٣ مرات يوميا

Patient Education

1- Avoid sudden postural changes .
2-high sodium diet .

Rheumatic Fever

Rheumatic fever is an illness that typically occurs in childhood. Rheumatic fever is not an infection, but rather the result of an untreated streptococcal infection, such as strep throat or scarlet fever. children who have had strep infections that were untreated or inadequately treated. لم يتم إعطائهم كورس مضاد حيوى كافى (An estimated 2 to 3 percent of people who have untreated group A streptococcal pharyngitis will develop acute rheumatic fever.) Although rheumatic fever can occur at any age, it is most frequent in children 5 to 15 years old.

Diagnosis of Rheumatic Fever

The symptoms of rheumatic fever usually appear one to five weeks after the child has been infected with streptococcus. Rheumatic fever may develop slowly, starting with a mild infection of the heart.

order diagnostic tests such as:

1- A throat culture
2- A blood test (including a test to evaluate for a history of strep infection)
3- An echocardiogram, or ultrasound of the heart
4- A chest X-ray

There is no definitive diagnostic test for rheumatic fever. The diagnosis of rheumatic fever is made when two major criteria , or one major criterion plus two minor criteria, are present along with evidence of a previous streptococcal infection.

Major criteria

1- Carditis: inflammation of the heart muscle which can manifest as congestive heart failure with shortness of breath, pericarditis with a rub, or a new heart murmur.
2- Migratory polyarthritis: a temporary migrating inflammation of the large joints, usually starting in the legs and migrating upwards.
3- Sydenham's chorea (St. Vitus' dance): a characteristic series of rapid movements without purpose of the face and arms. This can occur very late in the disease.
4- Erythema marginatum: a long lasting rash that begins on the trunk or arms as macules and spread outward to form a snakelike ring while clearing in the middle. This rash never starts on the face and is made worse with heat.
5- Subcutaneous nodules (a form of Aschoff bodies): painless, firm collections of

collagen fibers on the back of the wrist, the outside elbow, and the front of the knees. These now occur infrequently.

Minor criteria

1- Fever: temperature elevation
2- Arthralgia: Joint pain without swelling
3- Laboratory abnormalities: increased Erythrocyte sedimentation rate, increased C reactive protein, leukocytosis
4- Electrocardiogram abnormalities: a prolonged PR interval
5- Evidence of Group A Strep infection: positive culture for Group A Strep, elevated or rising Antistreptolysin O titre
6- Previous rheumatic fever or inactive heart disease

Treatment :

Prompt treatment of group A streptococcal pharyngitis using benzathine penicillin g for a minimum of 10 days .

R / Retarpen 1,200,000 units .
Or : penadur 1,200,000 units .
المرضى الذين يزيد وزنهم عن ٢٥ كجم يعطون حقنة بالعضل يوميا لمدة ١٠ أيام

المرضى الذين يقل وزنهم عن ٢٥ كجم يعطون ٦٠٠،٠٠٠وحدة بالعضل يوميا لمدة ١٠ أيام

R / Ospen 1000 mg tab. (penicillin V) . ٢٥٠ – ٥٠٠ مجم كل ٦ ساعات

For penicillin –allergic patients :

R / Erythromycin 250 mg . tab.
قرص كل ٦ ساعات لمدة ١٠ أيام

Prevention of recurrent rheumatic fever :

R / Retarpen 1,200,000 units vial .
حقنة بالعضل كل شهر

Duration of antibiotic therapy :

+Documented rheumatic fever , but with no evidence of carditis : give penicillin for 5 years or to age 20 , whichever is longest .
+in presence of carditis : give penicillin for 10 years or to age 30 , whichever is longest .

For pain relief :

R / Alexoprin tab.
٢قرص ٣ مرات يوميا

N.B. : Alexoprin 75 inf. Or Aspocid 75 inf. Tab. Used for small children .

Anti-inflammatory medications
Based on the severity of the condition, medications may be prescribed to help decrease the swelling that occurs in the heart muscle, as well as to relieve joint pain. For severe heart inflammation, a corticosteroid, such as prednisone , can reduce the inflammation.

→ For patient with severe , acute , progressive carditis not responding to aspirin : use corticosteriods : e.g.
R / Hostacortin 5 mg . tab.
Or : Predilon 5 mg Tab.
٣أقراص بعد الأكل ٣ مرات يوميا حتى تتحسن الحالة ثم تنقص الجرعة تدريجيا .
الأطفال : ١-٢ مجم / كجم / يوم لمدة ٥ أيام ثم تنقص الجرعة تدريجيا .

N.B. Cortisone is taken till fever & toxemia and arthritis vanish and then gradually decrease the dose till E.S.R is normal stop it .

- راحة تامة فى السرير .
- إستئصال اللوزتين فى حالات الالتهاب المزمن .

Surgical procedures
In some patients, rheumatic fever damages a heart valve. Repairing this problem can often be delayed for many years. The physician may recommend expanding the narrowed mitral valve with a balloon catheter procedure or replacing it with another valve in surgery.

Lifelong therapy
Children who have had rheumatic fever may need lifelong treatment with antibiotics (long-acting penicillin) to prevent further attacks, and will usually have to take preventive antibiotics before surgery or dental procedures .

Heart Failure
(Congestive heart failure)

Definition :
(Cardiac output < Body needs)

Heart failure, also called congestive heart failure, is a life-threatening condition in which the heart can no longer pump enough blood to the rest of the body.

Causes, incidence, and risk factors
Heart failure is almost always a chronic, long-term condition, although it can sometimes develop suddenly. This condition may affect the right side, the left side, or both sides of the heart.

As the heart's pumping action is lost, blood may back up into other areas of the body, including:

- The liver
- The gastrointestinal tract and extremities (right-sided heart failure)
- The lungs (left-sided heart failure)

With heart failure, many organs don't receive enough oxygen and nutrients, which damages them and reduces their ability to function properly. Most areas of the body can be affected when both sides of the heart fail.

The most common causes of heart failure are hypertension (high blood pressure) and coronary artery disease. Other structural or functional causes of heart failure include the following:

- Valvular heart disease
- Congenital heart disease
- Dilated cardiomyopathy
- Lung disease
- Heart tumor

Heart failure becomes more common with advancing age. Patient is also at increased risk for developing heart failure if he is overweight, has diabetes, smoke cigarettes, abuse alcohol, or use cocaine.

*** Causes of Heart failure :***

1- Excessive pressure (pressure overload) e.g. Hypertension
2-Excessive volume (Volume overload) e.g. Mitral incompetence .
3- Diseased myocardium e.g. Myocaraditis .

*** Precipitating factors of heart failure ;***

1- Respiratory infections.
2-Rheumatic activity .
3- Endocarditis .
4- Cardiac arrhythmias e.g. atrial fibrillation.

Symptoms

- Weight gain
- Swelling of feet and ankles
- Swelling of the abdomen
- Pronounced neck veins
- Loss of appetite, indigestion
- Nausea and vomiting
- Shortness of breath with activity, or after lying down for a while
- Difficulty sleeping
- Fatigue, weakness, faintness
- Sensation of feeling the heart beat (palpitations)
- Irregular or rapid pulse
- Decreased alertness or concentration
- Cough
- Decreased urine production
- Need to urinate at night

Infants may sweat during feeding (or other exertion).

Some patients with heart failure have no symptoms. In these people, the symptoms may develop only with these conditions:

- Infections with high fever
- Anemia
- Abnormal heart rhythm arrhythmia
- Hyperthyroidism
- Kidney disease

Signs and tests

A physical examination may reveal either an irregular or a rapid heartbeat. There may be distended neck veins, enlarged liver, swelling of the limbs (peripheral edema), and signs of fluid around the lungs (pleural effusion).

Listening to the chest with a stethoscope may reveal lung crackles or abnormal heart sounds. Blood pressure may be normal, high, or low.

An enlargement of the heart or decreased heart functioning may be seen on several tests, including the following:

- Echocardiogram
- Heart catheterization
- Chest x-ray
- Chest CT scan
- Cardiac MRI
- Nuclear heart scans (MUGA, RNV)
- ECG, which may also show arrhythmias

This disease may also alter the following test results:

- CBC
- Blood chemistry
- Serum sodium
- BUN
- Creatinine

- Liver function tests
- Serum uric acid
- Atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP)
- Urinalysis
- Urinary sodium
- Creatinine clearance
- Swan-Ganz measurements (right heart catheterization)

If excessive fluid has accumulated around the sac surrounding the heart (pericardium), the fluid may be needed to be removed through a pericardiocentesis.

Treatment

* Management of chronic heart failure (C.H.F) :

I-Treatment of the underlying **cause :**

1- Medical treatment e.g. for hypertension .
2- Surgical treatment e.g. for valve lesions .

II- Treatment of the precipitating factorse.g. : Respiratory tract infection.

III-Nonpharmacological measures :

1- Resteriction of physical activity & bed rest .
2- Weight reduction in obese patients .
3- Diet:
   - Restriction of sodium chloride .
   - Low caloric diet .
   - Small light and frequent meals (4-6/day) .

IV-Specific pharmacologic agents;

1- Diuretics : First-line therapy
   a. Thiazide for mild heart failure .
   b. Loop for severe heart failure .

2- If HF is NOT adequately controlled ADD Digitalis .

3- If HF persists , ADD Vaso-dilator (Hydralazine or Isosorbid dinitrate or ACE.I)
NB) ACE inhibitors may be used before digitalis in combination with diuretics
4- If above measures fail, try Other inotropic agents e.g, Dopamine , Dobutamine , Amrinone & Milrinone .

Severe cases of CHF require more drastic measures. For example, excess fluid can be removed through dialysis, and circulatory assistance can be provided by implanted devices such as the intra-aortic balloon pump (IABP) and the left ventricular assist device (LVAD). These devices can be life-saving, but they are not permanent solutions. Patients who become dependent on circulatory support will need a heart transplant.

A number of studies have shown that heart failure symptoms can be improved with a special type of pacemaker. It paces both the right and left sides of heart. This is referred to as biventricular pacing or cardiac resynchronization therapy.

Complications

- Pulmonary edema

- Total failure of the heart to function (circulatory collapse)
- arrhythmias including lethal arrhythmias

Possible side effects of medications include:

- Low blood pressure (hypotension)
- Light-headedness and fainting
- Lupus reaction
- Headache
- Gastrointestinal upset (such as nausea, heartburn, diarrhea)
- Cough
- Muscle cramps
- Digitalis toxicity

Management of heart failure associated with atrial fibrillation ;

1- Digitalis is the drug of the choice .
2- It does not abolish the fibrillation . Digitalis may even worsen the fibrillation .
3- It slows conduction & prolongs ERP of A-V node .
4- Reduce ventricular rate ⇨ Slower , regular & more efficient .
5- Eliminates pluse deficit .

Acute pulmonary Edema

Management of Acute pulmonary Edema due to Acute Left Ventricular failure :

1- The patient "Sitting" position with legs dangling .

2- *Oxygen* by nasal catheter or face mask .

3- Morphine sulfate (10-15 mg) 5 mg IV repeated at 15-30 min. intervals :

The beneficial effects of morphine include :

a. Veino-dilator → Venous pooling → ↓ preload .
b. b-allaying anxiety .

4- Frusemide , 20-40 mg Slow IV :

a. An immediate veinodilator effect .
b. A subsequent diuretic effect .

5- Vasodilators ;

a. *Nitroglycerin* , SL or IV infusion → Veindilator.
b. b-*Sodium nitroprusside* IV infustion →Mixed Balanced Dilator .

(Both drugs → ↑ NO → ↑ cGMP.)

6- *Aminophylline* ,250-500 mg slow IV :

a- + ve inotropic .
b- Bronchodilator .
c- Diuretic .

7-Inotropic agents :

a- *Digoxin* IV .
b-*Dopamine* IV infusion .
c- *Dobutamine* IV infusion .

8- If a bove measures FAIL :

a- Rotating tourniquet. OR
b-Phlebotomy . OR
c-Endotracheal intubation & mechanical ventilation .

Angina Pectoris

Cardiac work = O2 requirements = O2 needs > O2 Supply = Coronary flow .

Types of Angina :

Type of Angina	Cause	Aim
1-Exertional (Effort , Stable)	*Coronary Atherosclerosis*	↓ Work
2-Prinzmetal (Variant) :	*Coronary VC*	*VD*
3- Unstable (Preinfarction , crescendo) ;	*Coronary Occlusion*	*BOTH*

A) Exertional Angina

I-General measures :

1- Change Bad Habits : stop smoking , weight reduction & Gradual exercise .
2- Avoid ; Exertion , emotions , heavy meals & Cold .
3- Treat : Hypertension , Diabetes mellitus & Hypercholesterolaemia .

II- Drug Treatment :

A) Acute (pain) attacks & immediate prophylaxis :

1- Nitroglycerine : S.L. 0.5 Buccal spray 0.4 mg .
2- Isosorbid dinitrate : S.L. 5 mg. Buccal spray 1.25 mg.

In Acute Attack (pain) : Repeat drug every 5 min. till disappearance of pain or maximum 3 doses , otherwise→Myocardial infarction .
In immediate prophylaxis : Drugs are taken 5 minutes before exertion .

B) Long Term prophylaxis :

1-Long Acting Nitrate : Oral S.R. or Topical (transdermal patch or ointment)

And /or

2- Calcium channel blocker.

And / or

3- β-blocker.

C) Anti-platelet Drugs:
Aspirin (75-150 mg / day) & Dipyridamol (75 mg tds orally)

D) Coronary Artery reperfusion : CABG or PTCA

B) Variant Angina

* Treatment of Acute attacks & prophylaxis :
Organic nitrate and /or Calcium channel blocker .(No β-Blocker) .

C) Unstable Angina

1- 1-Organic Nitrates (S.L., Spray , I.V. , Oral , Topical) and
2- Nifedipine and
3- 3- β-Blocker (Without I.S.A.) and
4- Anti-thrombotic (Aspirin and Heparin) .

Cyanotic Attacks

Low oxygen levels in the blood cause the lips, fingers, and toes to look blue (cyanotic)



Definition

Cyanotic heart disease is a heart defect, present at birth

(congenital), that results in low blood oxygen levels. There may be more than one defect. The defect affects the structure or function of the heart or vessels.

Causes, incidence, and risk factors

Cyanotic heart disease results in abnormal blood flow from the right to the left part of the body. This abnormal blood flow (called right-to-left shunt) causes too little oxygen to move through the blood.

Cynanotic heart disease causes the child's skin to look blue (cyanosis) . This bluish color is most often seen on the lips, fingers, and toes, or during exercise. Some heart defects cause major problems immediately after birth, and some cause few, if any, problems until adulthood.

Congenital heart defects that cause cyanosis include:

- Tetralogy of Fallot
- Transposition of the great vessels
- Ebstein's anomaly
- Tricuspid atresia (a deformity of the tricuspid heart valve)
- Total anomalous pulmonary venous return
- Pulmonic stenosis
- Truncus arteriosus
- Hypoplastic left heart syndrome
- Critical pulmonary valvular stenosis
- Coarctation of the aorta
- Interrupted aortic arch
- Pulmonary valve atresia

Most congenital heart diseases affect only to the heart, but some conditions many affect many organs. Not all congenital heart diseases are cyanotic.

Some cyanotic heart diseases are caused by drug use, chemical exposure, or infections (such as Rubella) during pregnancy.

Cyanosis may also be caused by lung disease, abnormal forms of hemoglobin (the protein that carries oxygen through the blood), dehydration, and hypoglycemia.

Cyanosis is a sign of Eisenmenger syndrome, a condition that occurs in patients with congenital heart disease. Eisenmenger syndrome occurs as a complication of increased blood flow from the left side of the heart directly to the lungs. This results in severe lung diseases and increased pressures on the right side of the heart.

Symptoms

One symptom is cyanosis, usually seen as a bluish discoloration of the lips, fingers, and toes.

Some children have dyspnea (breathing problems) and adopt a squatting position after physical activity to relieve breathlessness. Others have hypoxic spells, where their bodies are suddenly starved of oxygen. These are characterized by anxiety, hyperventilation, and a sudden increase in cyanosis.

Syncope (fainting) and chest pain may occur.

Other symptoms depend on the specific type of cyanotic heart disease.

Signs and tests

Physical examination confirms cyanosis. The child may have clubbed fingers .

The doctor will listen to the heart and lungs with a stethoscope. Abnormal heart sounds, a heart murmur, and lung crackles may be heard.

Tests will vary depending on the cause, but may be extensive and include:

- Chest x-ray
- Complete blood count (CBC)
- Arterial blood gas
- ECG (echocardiogram)
- Echo-Doppler
- Transesophageal echocardiogram (TEE)
- Nuclear imaging tests
- Cardiac catheterization
- Electrophysiologic study (EPS)

Treatment

Some children may need to stay in the hospital so they can receive oxygen or be put on a breathing machine.

Medication such as digoxin, diuretics, antiarrhythmics, and prostaglandins may be prescribed.

The treatment of choice for many congenital heart diseases is surgery to repair the defect. One commonly used operation is called the Fontan procedure.

Some patients may need a permanent pacemaker.

Infective Endocarditis

The inside of heart contains four chambers and four valves lined by a thin membrane called the endocardium. Endocarditis is an infection of this inner lining.

Endocarditis typically occurs when bacteria or other germs from another part of the body, such as mouth, spread through bloodstream and lodge in the heart. Left untreated, endocarditis can damage or destroy heart valves. The consequences can be life-threatening.

Endocarditis is rare in people with healthy hearts. People at greatest risk of endocarditis have a damaged heart valve, an artificial heart valve or other heart defects.

Signs and symptoms

Endocarditis may develop slowly or suddenly — depending on what's causing the infection and whether patient has any underlying heart abnormalities.

Signs and symptoms may include:

- Fever
- Chills
- Weakness
- Fatigue
- Aching joints and muscles
- Night sweats
- Shortness of breath
- Paleness

- Persistent cough
- Swelling in feet, legs or abdomen
- Unexplained weight loss
- Blood in urine
- A new heart murmur
- Tenderness in spleen — an infection-fighting abdominal organ on left side, just below rib cage

Sometimes endocarditis causes red, tender spots under the skin of the fingers. These are known as Osler's nodes. Tiny purple or red spots known as petechiae may be noticed on other areas of the skin. Similar spots may appear in the whites of eyes .

Causes

Endocarditis occurs when germs enter bloodstream, travel to heart and lodge on abnormal heart valves or damaged heart tissue. Bacteria are the cause of most cases, but fungi, viruses or other microorganisms also may be responsible.

Sometimes the culprit is one of many common bacteria that live in mouth, upper respiratory tract or other parts of the body. In other cases, the offending organism may gain entry to bloodstream through:

- Certain dental or medical procedures. Any dental procedure that causes bleeding may allow bacteria to enter bloodstream. Bacteria may be a concern with procedures involving the respiratory, urinary or intestinal tract as well.
- An infection or other medical condition. Bacteria may spread from an infected area, such as a skin sore. Gum disease, a sexually transmitted disease or an intestinal disorder — such as inflammatory bowel disease — also may give bacteria the opportunity to enter bloodstream.
- Catheters or needles. Bacteria can enter the body through a catheter — a thin tube sometimes used to inject or remove fluid from the body. Contaminated needles and syringes are a concern for people who use intravenous (IV) drugs.
- Common activities. Even everyday activities such as brushing teeth or chewing food can allow bacteria to enter bloodstream — especially if the teeth and gums are in poor condition.

Typically, the immune system destroys bacteria that make it into bloodstream. Even if bacteria reach the heart, they may pass through without causing an infection.

Most people who develop endocarditis have a diseased or damaged heart valve — an ideal spot for bacteria to settle. This damaged tissue in the endocardium provides bacteria with the roughened surface they need to attach and multiply.

Risk factors

Patient is at risk of endocarditis if he has :

- Damaged heart valves. Certain medical conditions — such as the once-common childhood illness rheumatic fever — can damage or scar one or more of heart valves, making them more prone to infection.
- Congenital heart defects or heart valve defects. If patient was born with an abnormal heart valve or other heart defect, his heart may be more susceptible to infection.
- Other heart valve problems. Severe mitral valve prolapse is the most common heart condition associated with endocarditis. In this condition, mitral valve — one of the four heart valves that normally open and close to allow blood to flow in only one direction through heart — doesn't close properly. In severe cases, the valve may even allow blood to flow backward in heart.
- Artificial heart valve. An artificial heart valve can provide a spot for bacteria to settle and multiply, infecting the surrounding tissue. Bacteria can also be introduced into heart during surgery to implant an artificial valve.
- Thickening of the heart muscle. This rare condition, known as hypertrophic cardiomyopathy, impedes blood flow through the heart. It can damage or distort heart valves. Signs and symptoms include shortness of breath, chest pain and loss of consciousness with exertion.
- A history of endocarditis. An episode of endocarditis nearly always injures heart, increasing the risk of a future heart infection.

Screening and **Diagnosis**

- <u>Medical history</u>
- <u>physical signs</u> and symptoms, such as fever. Using a stethoscope to listen to the heart, a new heart murmur or a change in a previous heart murmur may be heared— possible indicators of endocarditis.

Various tests may be necessary to help make the **Diagnosis**:

- <u>Blood tests.</u> To identify certain conditions, including anemia — a shortage of healthy red blood cells that can be a sign of endocarditis. And to identify the type of bacteria or other microorganism that may be infecting the heart.
- <u>Echocardiogram</u>. This test uses sound waves to produce images of the heart at work. Abnormal thickening or leakage of heart valves may be detected, or even abnormal growths (vegetations) that contain collections of bacteria — a telltale sign of endocarditis.
- <u>Transesophageal echocardiogram.</u> to get a closer look at the heart valves. It's often used to check for vegetations or infected tissue. During this test,

an ultrasound device is passed through the mouth and into the esophagus — the tube that connects the mouth and stomach.

- Electrocardiogram (ECG). In this test, patches with wires (electrodes) are attached to the skin to measure heart's electrical impulses. The impulses are displayed as "waves" on a monitor or printed on paper. An infection in the heart can cause disruptions in the normal flow of electrical rhythms through the heart.
- Chest X-ray. to check the heart and lungs for physical abnormalities. Because endocarditis can make it harder for the heart to pump blood normally, an X-ray may reveal blood and fluid backed up into the lungs.

Complications

Endocarditis can cause clumps of bacteria and cellular debris (vegetations) to form in the heart at the site of the infection. These clumps can break loose and travel to the brain, lungs, abdominal organs or kidneys. This may cause various problems, including stroke, neurological changes and organ damage.

Left untreated, endocarditis can damage the heart valves and permanently destroy heart's inner lining. This can cause the heart to work harder to pump blood leading to heart failure — a chronic condition in which the heart is unable to pump enough blood to meet the body's needs. If the infection progresses, it's usually fatal.

Treatment

High doses of intravenous antibiotics may be needed in the hospital. E.g.

R / Pencillin G sodium 1,000,000 U vials .
٣٠٠ألف وحدة لكل كجم من وزن الجسم بالوريد
مقسمة على ٣-٤ جرعات .

Or : Unasyn Vial .
١٥٠-٢٠٠مجم لكل كجم من وزن الجسم يوميا بالوريد

R: Claforan Vial . ٥٠مجم -١٥٠ مجم لكل كجم مقسمة على ٣-٤ جرعات يوميا بالعضل أو الوريد

Or : Rocephin Vial . ١٠٠مجم لكل كجم من وزن الجسم يوميا

Or : Garamycin 80 mg amp. ٥-٧ مجم لكل كجم بالعضل أو الوريد يوميا

R / Flagyl (metronidazole) I.V. infusion . ١٥ مجم لكل كجم يوميا مقسمة على ٤ جرعات بالوريد

R / Therargan Syrup.
Or : Obron cap.
ملعقة أو كبسولة من الفيتامين ٢-٣ مرات يوميا

N.B : Blood tests may help identify the type of microorganism that's infecting the heart which will help in choosing the best antibiotic or combination of antibiotics to fight the infection.

Antibiotics may be taken for up to six weeks to clear up the infection. Once the fever and the worst of signs and symptoms have passed, patient may be able to leave the hospital and continue antibiotic therapy in an outpatient setting.

- راحة تامة فى السرير .
- تعاطى جرعات واقية من المضادات الحيوية قبل إجراء أى عملية بساعة بما فى ذلك خلع الأسنان و يستمر المضاد الحيوى لمدة ٤ أيام بعد العملية

Surgery : If the infection damages the heart valves, patient may has symptoms and complications for years after Treatment. Sometimes surgery is needed to treat persistent infections or replace a damaged valve.

Heart attack (Myocardial infarction)

Definition A heart attack (myocardial infarction) occurs when an area of heart muscle dies or is permanently damaged because of an inadequate supply of oxygen to that area.

Causes, incidence, and risk factors

Most heart attacks are caused by a clot that blocks one of the coronary arteries (the blood vessels that bring blood and oxygen to the heart muscle). The clot usually forms in a coronary artery that has been previously narrowed from changes related to atherosclerosis. The atherosclerotic plaque (buildup) inside the arterial wall sometimes cracks, and this triggers the formation of a clot, also called a thrombus.

A clot in the coronary artery interrupts the flow of blood and oxygen to the heart muscle, leading to the death of heart cells in that area. The damaged heart muscle loses its ability to contract, and the remaining heart muscle needs to compensate for that weakened area.

Occasionally, sudden overwhelming stress can trigger a heart attack.

The risk factors for coronary artery disease and heart attack include:

1- Smoking
2- High blood pressure
3- Too much fat in diet
4- Poor blood cholestrol levels, especially high LDL ("bad") cholesterol and low HDL ("good") cholesterol
5- Diabetes
6- Male gender
7- Age
8- Heredity

Many of the risk factors listed are related to being overweight.

Newer risk factors for coronary artery disease have been identified over the past several years. These include elevated homocysteine, C-reactive protein, and fibrinogen levels. Homocysteine is an amino acid. C-reactive protein is connected with inflammatory reactions, and fibrinogen is a blood clotting component. High homocysteine can be treated with folic acid supplements.

Symptoms

Chest pain behind the sternum (breastbone) is a major symptom of heart attack, but in many cases the pain may be subtle or even completely absent (called a "silent heart attack"), especially in the elderly and those with diabetes. Often, the pain radiates from chest to arms or shoulder; neck, teeth, or jaw; abdomen or back. Sometimes, the pain is only felt in one these other locations.

The pain typically lasts longer than 20 minutes and is not fully relieved by rest or nitroglycerine, both of which can relieve pain from angina.

The pain can be intense and severe or quite subtle and confusing. It can feel like:

1- Squeezing or heavy pressure
2- A tight band on the chest
3- "An elephant sitting on chest"
4- Bad indigestion

Other symptoms patient may has either alone or along with chest pain include:

- Shortness of breath
- Cough
- Lightheadedness - dizziness
- Fainting
- Nausea or vomiting
- Sweating, which may be profuse
- Feeling of "impending doom"
- Anxiety

Signs and tests

During a physical examination, a rapid pulse may be noted. Blood pressure may be normal, high, or low. While listening to the chest with a stethoscope, the doctor may hear crackles in the lungs, a heart murmur, or other abnormal sounds.

The following tests may reveal a heart attack and the extent of heart damage:

- Electocardiogram (ECG) -- single or repeated over several hours
- Echocardiography
- Coronary angiography
- Nuclear ventriculography

The following tests may show the by-products of heart damage and factors indicating patient has a high risk for heart attack:

- Troponin I and troponin T (proteins involved in muscle contraction)
- CPK and CPK-MB
- Serum myoglobin

Treatment

A heart attack is a medical emergency Hospitalization is required and possibly intensive care. Continuous ECG monitoring is started immediately, because life-threatening arrhythmias (irregular heart beats) are the leading cause of death in the first few hours of a heart attack.

The goals of treatment are to stop the progression of the heart attack, to

reduce the demands on the heart so that it can heal, and to prevent complications.

Medications and fluids will be inserted directly into a vein using an intravenous (IV) line. Various monitoring devices may be necessary. A urinary catheter may be inserted to closely monitor fluid status.

Oxygen is usually given, even if blood oxygen levels are normal. This makes oxygen readily available to the tissues of the body and reduces the workload of the heart.

PAIN CONTROL MEDICATIONS

Intravenous nitroglycerin or other medicines are given for pain and to reduce the oxygen requirements of the heart.

Morphine and similar medicines are potent pain killers that may also be given for a heart attack.

R / **Morphine 10 mg amp.**

٥- ١٠ مجم يضاف إلى ١٠ مل من محلول جلوكوز ٥% و يعطى ٢ مجم كل ٥ دقائق بالوريد ببطء

BLOOD THINNING MEDICATIONS

1-Thrombolytic therapy :

R / **Streptokinase** : 750,000 units over 20 minutes followed by 750,000 units over 40 minutes .

R / **Tissue plasminogen activator** (t-PA) : infuse 10 mg initially , then 50 mg over first hours , followed by 10 mg /h for 4 hours .

R / **Anisolyed plasminogen streptokinase Activator complex** (Anistreplase : APSAC) 30 units infused over 2-5 minutes .

2- Anticoagulants :

R / **Heparin Amp.** 500 units S.C/8-12 hours .
OR / **Coumadin tab.** قرص مرتين يوميا

If the ECG recorded during chest pain shows a change called "ST-segment elevation," thrombolytic therapy (blood-thinning drugs) may be started within 12 hours of when chest pain began. This initial clot-dissolving therapy will be administered as an IV infusion of streptokinase or tissue plasminogen activator, and will be followed by an IV infusion of heparin.

Heparin therapy, designed to prevent the formation of new clots, will last for 48 to 72 hours. Additionally, warfarin (Coumadin), taken orally, may be prescribed to prevent further development of clots.

Thrombolytic therapy is not appropriate for people who have had:

- Bleeding inside their head known as an intracranial hemorrhage
- Brain abnormalities such as tumors or blood vessel malformations
- Stroke within the past 3 months (or possibly longer)

- Head injury within the past 3 months

Additionally, thrombolytic therapy is extremely dangerous in those who have had:

- Severe high blood pressure
- A major surgery or major trauma within the past 3 weeks
- Internal bleeding within the past 2-4 weeks
- Peptic ulcer disease

This therapy is also very dangerous in women who are currently pregnant, and in people who use blood thinners such as Coumadin.

Antiplatelets :
R / **Aspirin 75 mg chew. tab.**
٢قرص مضغ مع الغداء
Or : **Plavix tab.** قرص واحد يوميا
Or : **Ticlid tab.** قرص واحد يوميا

A cornerstone of therapy for a heart attack is antiplatelet medication. Such medication can prevent the collection of platelets at a site of injury in a blood vessel wall -- like a crack in an atherosclerotic plaque. Platelets collecting and accumulating is the initial event that leads to clot formation. One antiplatelet agent widely used is aspirin. Two other important antiplatelet medications are ticlopidine (Ticlid) and clopidogrel (Plavix).

OTHER MEDICATIONS

- Beta-blockers (like metoprolol, atenolol, and propranolol) are used to reduce the workload of the heart and lower blood pressure.
- ACE Inhibitors (like ramipril, lisinopril, enalapril, or captopril) are used to prevent heart failure and lower blood pressure.

SURGERY AND OTHER PROCEDURES

Emergency coronary angioplasty may be required to open blocked coronary arteries. This procedure may be used instead of thrombolytic therapy, or in cases where thrombolytics should not be used. A device called a stent is often inserted into the artery during angioplasty, to help ensure that the newly opened coronary artery remains open after surgery.
Emergency coronary artery bypass surgery (CABG) may be required in some cases.

Recent evidence supports the use of angioplasty and stenting as the first-line therapy to reopen a clogged heart artery if this procedure can be performed in a timely manner in an experienced center. If this procedure is not available, the use of thrombolytic therapy is warranted مبرَّر.

Complications

- Arrhythmias such as ventricular tachycardia, ventricular fibrillation, heart blocks
- Congestive heart failure
  Crdiogenic shock

- Infarct extension: extension of the amount of affected heart tissue
- Pericarditis (inflammation around the lining of the heart)
- Pulmonary embolism (blood clot in the lungs)
- Complications of treatment (For example, thrombolytic agents increases the risk of bleeding.)

Prevention

To prevent a heart attack:

- Control blood pressure.
- Control total cholesterol levels by a medication of the statins group (atorvastatin, simvastatin).
- Stop smoking.
- Eating a low fat diet rich in fruits and vegetables and low in animal fat.
- Control diabetes.
- Lose weight in case of overweight.
- Exercise daily or several times a week by walking and other exercises to improve heart fitness.

Acute Myocarditis

Definition : Myocarditis is an inflammation of the heart muscle.

Causes, incidence, and risk factors

Myocarditis is an uncommon disorder that is usually caused by viral infections such as coxsackie virus, adenovirus, and echovirus. It may also occur during or after various viral, bacterial, or parasitic infections (such as polio, influenza, or Rubella).

The condition may also be caused by exposure to chemicals or allergic reactions to certain medications and it can be associated with autoimmune diseases.

The heart muscle becomes inflamed and weakened. This causes symptoms of heart failure.

Symptoms

- History of preceding viral illness
- Fever
- Chest pain that may resemble a heart attack
- Joint pain or swelling
- Abnormal heart beats
- Fatigue
- Shortness of breath
- Leg swelling
- Inability to lie flat

Total absence of symptoms is common

Additional symptoms that may be associated with this disease:

- Fainting, often related to arrhythmias
- Low urine output
- Other symptoms consistent with a viral infection -- headache, muscle aches, diarrhea, sore throat, rashes

Signs and tests

A physical examination may detect a rapid heartbeat (tachycardia) or abnormal heart beats, abnormal heart sounds (murmurs, extra heart sounds), fluid in the lungs and fluid in the skin of the legs. In addition, other signs suggestive of an infection may be present: fever, rashes, red throat, itchy eyes, swollen joints.

Tests used in the **Diagnosis** of myocarditis include:

- Electrocardiogram (ECG)
- Chest x-ray
- Ultrasound of the heart (echocardiogram) -- may show weak heart muscle, an enlarged heart, or fluid surrounding the heart.
- White blood cell count
- Red blood cell count
- Blood cultures for infection
- Blood tests for antibodies against the heart muscle and the body itself
- Heart muscle biopsy - rarely performed

Treatment

- Evaluation and treatment of underlying cause.
- Bed rest .

- antibiotics :

R / Cefotax 1gm vial .

حقنة عضل كل ١٢ ساعة بالوريد

- Steroids and other medications may be used to reduce inflammation.

R / Epidron amp.

٣ مجم / كجم / يوميا بالعضل

- Diuretic medicines are also given to remove body water via the urine.

R / Lasix amp. Or tab.

٢مجم / كجم يوميا

Ventricular tachycardia

Definition Ventricular tachycardia is a rapid heart beat initiated within the ventricles, characterized by 3 or more consecutive premature ventricular beats.

Causes, incidence, and risk factors

Ventricular tachycardia is a potentially lethal disruption of normal heartbeat arrhythmia that may cause the heart to become unable to pump adequate blood through the body. The heart rate may be 160 to 240 (normal is 60 to 100 beats per minute).

Ventricular tachycardia can occur in the absence of apparent heart disease. It can also develop as an early or a late complication of a heart attack, or during the course of cardiomyopathy, valvular heart disease, myocarditis, and following heart surgery.

Healed heart attacks form scar tissue which can lead to ventricular tachycardia. This can occur days, months, or years after the heart attack.

Ventricular tachycardia can also result from anti-arrhythmic

medications (an undesired effect) or from altered blood chemistries (such as a low potassium level), pH (acid-base) changes, or insufficient oxygenation.

A common mechanism for ventricular tachycardia is reentry (re-stimulation of the electrical conductive pathway from a single initial stimulus). Ventricular tachycardia is classified as nonsustained (often defined as lasting less than 30 seconds) or sustained.

"Torsade de pointes" is a form of ventricular tachycardia with a specific variation in the conduction of the ventricular stimulus.

Ventricular tachycardia occurs in approximately 2 out of 10,000 people.

Symptoms

- Sensation of feeling the heart beat (palpitations)
- Light-headedness or dizziness
- Fainting
- Shortness of breath
- Chest discomfort (angina)

Note: Symptoms may start and stop suddenly. In some cases, there are no symptoms.

Signs and tests

Ventricular tachycardia can occur in episodes during which the person will have a rapid pulse or the symptoms described above. The blood pressure may be normal or low. Loss of consciousness may occur. Ventricular tachycardia is a potentially lethal arrhythmia and may result in an absent pulse.

Ventricular tachycardia may be seen on:

- An ECG
- A continuous ambulatory electrocardiogram (Holter monitor)
- A loop recorder, for ambulatory ECG recordings exceeding 24 hrs
- An intracardiac electrophysiology study (EPS)

Blood chemistries and other tests may be performed.

Treatment

treatment varies with the symptoms, the situation, and the underlying cardiac disorder. No treatment may be required in some cases.

A – Acute ventricular tachyacrdia :
Ventricular tachycardia may become an emergency situation and may be require CPR, electrical defibrillation or cardioversion (electric shock),

or intravenous anti-arrhythmic medications (such as lidocaine, procainamide, bretylium, or sotalol).

R / Xylocard (Lidocaine) 20 mg / ml amp. 1 mg / kg I.V. bolus injection .

If not effective :

R / Pronestyl (Procainamide) 100 mg/ml vial .
100mg I.V. slowly / 5min up to 1000

mg followed by an infusion of 20-80 μg /kg / min .

B- Chronic Recurrent ventricular tachyacrdia :
Long-term treatment of ventricular tachycardia may require the use of oral anti-arrhythmic medications (such as procainamide, amiodarone, or sotalol). Anti-arrhythmic medications, however, may have severe side effects, and their use is currently decreasing in favor of other treatment s.

R / Coradrone (Amiodarone)
150mg Amp.
800 -1600 mg / day for 7-21 days
Maintain at 100 – 400 mg / day .

- In recent years, a preferred treatment for many chronic (long-term) ventricular tachycardias consists of implanting a device called implantable cardioverter defibrillator (ICD). The ICD is implanted usually in the chest, like a pacemaker, and it is connected to the heart with wires.

The ICD is programmed by the doctor to sense ventricular tachycardia when it is occurring, and to administer a shock to abort it. The ICD may also be programmed to send a rapid burst of paced beats to interrupt the ventricular tachycardia. The ventricular tachycardia may require also the use of concomitant anti-arrhythmic agents to prevent repeated firing of the ICD.

Atrial fibrillation/flutter

Definition Atrial fibrillation/flutter is a heart rhythm disorder (arrhythmia). It usually involves a rapid heart rate, in which the upper heart chambers (atria) are stimulated to contract in a very disorganized مُشَوَّش and abnormal manner.

Causes, incidence, and risk factors

arrhythmia are caused by a disruption of the normal functioning of the electrical conduction system of the heart. Normally, the atria and ventricles contract in a coordinated manner.

In atrial fibrillation and flutter, the atria are stimulated to contract very quickly and differently from the normal activity originating from the sinoatrial node. This results in ineffective and uncoordinated contraction of the atria in atrial fibrillation, and in a peculiarly بشكل غريب organized contraction pattern in atrial flutter.

The condition can be caused by impulses which are transmitted to the ventricles in an irregular fashion or by some impulses failing to be transmitted. This makes the ventricles beat irregularly, which leads to an irregular (and usually fast) pulse in atrial fibrillation.

In atrial flutter, however, the ventricles may beat rapidly, but regularly. If the atrial fibrillation/flutter is part of a condition called sick sinus syndrome, the sinus node may not work properly, and the heart rate may

alternate between slow and fast. The result may be not enough blood to meet the needs of the body.

Underlying causes of atrial fibrillation and flutter include dysfunction of the sinus node (the "natural pacemaker" of the heart) and a number of heart and lung disorders, including coronary artery disease, rheumatic heart disease, mitral valve disorders, pericarditis, and others.

Hyperthyroidism, hypertension, and other diseases can cause arrhythmias, as can recent heavy alcohol use (binge drinking). Some cases of atrial fibrillation or flutter occur in the setting of a heart attack or soon after surgery on the heart.

Atrial fibrillation can affect both men and women. The prevalence الإنتشار of atrial fibrillation increases with age and varies from 1 case out of 200 persons for people younger than 60 years, to almost 9 cases out of 100 persons for people over 80 years.

Symptoms

- Sensation of feeling heart beat (palpitations)
- Pulse may feel rapid, racing السباق, pounding القصف, fluttering, or it can feel too slow
- Pulse may feel regular or irregular
- Dizziness, light-headedness
- Fainting
- Confusion
- Fatigue
- Shortness of breath
- Breathing difficulty, lying down
- Sensation of tightness in the chest

Note: Symptoms may begin or stop suddenly.

Signs and tests

Listening to the heart with a stethoscope shows fast heart beat. The pulse may feel rapid, irregular, or both. The normal heart rate is 60 to 100, but in atrial fibrillation/flutter the heart rate may be 100 to 175. Blood pressure may be normal or low.

An ECG shows atrial fibrillation or atrial flutter. Continuous ambulatory cardiac monitoring -- Holter monitor (24 hour test) -- may be necessary because the condition is often sporadic (occurring at some times but not others).

Tests to determine the presence of underlying heart diseases may include:

- Echocardiogram
- Nuclear imaging tests
- Coronary angiography
- Exercise treadmill ECG
- Electrophysiologic study (EPS) may be needed in some cases

Treatment

In certain cases, atrial fibrillation may require emergency treatment to convert the arrhythmia to normal (sinus) rhythm. This treatment may involve either with electrical cardioversion or intravenous (IV) drugs such as amiodarone .

Long-term treatment varies depending on the cause of the atrial fibrillation or flutter. Medication may include beta-blockers, calcium channel blockers, digitalis or other medications (such as anti-arrhythmic drugs), which slow the heartbeat or the conduction of the impulse from the atria to the ventricles.

R / Lanoxin (Digoxin) 0.5 Amp. And tab.
أمبول بالوريد أولا ثم قرص كل ٦ ساعات حتى يقل النبض عن ١٠٠ / دقيقة ثم قرص واحد يوميا بعد ذلك و راحة يوم الجمعة .

If digitalis fails :
R / Isoptin (verapamil) 80 mg tab.
قرص ٣ مرات يوميا
Or : Quinidine 200mg tab.
قرص كل ٤ ساعات
Or : Inderal 40 mg tab.
١-٢ قرص كل ٦ ساعات

Blood thinners, such as heparin or Coumadin, may be given to reduce the risk of a thromboembolic event such as a stroke.

Some selected patients with atrial fibrillation, rapid heart rates, and intolerance to medication may require a catheter procedure on the atria called radiofrequency ablation.

For some patients with atrial flutter, radiofrequency ablation is the current treatment of choice. Some patients with atrial fibrillation and rapid heart rates may need the radiofrequency ablation done not on the atria, but directly on the AV junction (i.e., the area that normally filters the impulses coming from the atria before they proceed to the ventricles).

Ablation of the AV junction leads to complete heart block. treatment for this condition requires a permanent pacemaker.

Complications

- A pulse that is too rapid or too slow may reduce the amount of blood the heart can pump and lead to syncope (fainting).
- Emboli to the brain (stroke) or elsewhere -- rare, but often treated with anticoagulation to reduce this risk.

Cardiogenic shock

Definition Cardiogenic shock is a disease state where the heart is damaged enough that it is unable to supply sufficient blood to the body.

Causes, incidence, and risk factors

Shock occurs whenever the heart is unable to pump enough blood for the needs of the body. Cardiogenic shock can be caused by disorders of the heart muscle, the valves, or the heart's electrical conduction system.

Some related disorders include heart attack, heart failure, cardiomyopathy, rupture of the heart, abnormal heart rhythms, and heart valve disorders (especially leaky valves).

Symptoms

- Rapid pulse

- Pulse may be weak (thready)
- Rapid breathing
- Anxiety, nervousness
- Skin may feel cool to touch
- Weakness, lethargy, fatigue
- Decreased mental status
    - Loss of alertness
    - Loss of ability to concentrate
- Restlessness, agitation, confusion
- Coma
- Skin color pale or mottled
- Profuse sweating, moist skin
- Decreased urine output (or none)

Signs and tests

An examination will reveal low blood pressure (less than 90 systolic), and the blood pressure may drop more than 10 points when the patient stands up after lying down (orthostatic hypotension). The pulse may be weak or absent.

To diagnose cardiogenic shock, a catheter (tube) may be placed in the pulmonary artery. Measurements often indicate that blood is backing up into the lungs and that the heart has poor pumping function.

Tests used in patients with cardiogenic shock include:

- Electrocardiogram
- Coronary angiography
- Echocardiogram
- Nuclear scans

Other tests may be recommended to determine the cause of the heart's failure to function properly.

Laboratory tests include:

- CBC
- Type and cross-match blood for possible transfusion
- Arterial blood gas
- Blood chemistry (chem-7, chem-20, electrolytes, cardiac enzymes)

Treatment

Cardiogenic shock is a medical emergency. treatment requires hospitalization. The goal of treatment is to save the patient's life and treat the underlying cause of shock.

-Dopamine, dobutamine, epinephrine, norepinephrine, amrinone, or other medications may be required to increase blood pressure and heart functioning.

R / Dopamine 200mg / 5ml) amp.

- Pain medicine may be given if necessary. Bed rest is recommended to reduce demands on the heart.

- Oxygen reduces the workload of the heart by reducing tissue demands for blood flow.

Intravenous fluids, including blood and blood products, may be given if indicated.

Other treatments of shock may include:

- Cardiac pacing (pacemaker)

- Heart monitoring, including hemodynamic monitoring, to guide treatment
- Intra-aortic balloon counterpulsation (IABP) to improve heart and blood vessel (cardiovascular) function

Note: Surgical repair of the cause should be performed if it is feasible. Balloon angioplasty (PTCA) may be an alternative to surgery in some cases.

Therapeutics

Antihypertensive & antianginal drugs

1- Diuretics:

Section-1 Thiazides and related Diuretics

They inhibit sodium and chloride re-absorption in the distal renal tubules, and produce increase in the K excretion .

Uses by their diuretic effect prevent oedema & ascitis in Congestive Heart failure , Liver & Kidney diseases – used alone as first-line anti-hypertensive or together with other agents like B-Blockers & ACE inhibitors .

Hydrochlorothiazide

Hydretic	30 tab.	Chemipharm	2.5mg.
Hydrex 25	20 tab.	Memphis	25mg.

Dose : 25:50mg./24:48 hours – Odema 50:100mg./24:48mg

Section-2 Loop (High Ceiling) Diuretics

They produce an intense dose-dependent diuresis of relatively short duration, they may be effective in patients unresponsive to thiazides diuretics, also the used in the treatment of renal insufficiency .

Bumetanide

Uses by their diuretic effect prevent oedema & ascitis in Congestive Heart failure , Liver & Kidney diseases – used in hypertension or together with other agents like B-Blockers & ACE inhibitors .

Dose Oedema 0.5:2mg. Daily – can be used in emergency 1mg. I.V.– most of cases respond to 10mg. Daily – potassium intake should be continouse with bumetanide .

Burinex 1	20 tab.	MinaPharm/Leo	1mg
Edemex 1	20tab .	Memphis	1mg
Edemex 25	3 amp.	Memphis	25mg

Furosemide

Indications Oedema due to cardiac, hepatic or renal disorders (treatment of the basic disorder is the prime concern). Oedema due to burns. Mild to moderate hypertension.

Dose 20 : 40mg. Daily or day after day can be increased to 80mg. Daily .

Furosemide 40	one 4ml. amp	Sedico	40mg./amp
Furosemide	5 amps.	Alex.	20mg./a

20			mp
Lafurex 20	20 tab	Amoun	20mg.
Lafurex 40	20 tab	Amoun	40mg.
Lafurex 20	5 amp.	Amoun	20mg.
Lafurex 40	3 amp.	Amoun	40mg. – i.m.,i.v.
Lasix 40	24 tab	Aventis	40mg
Lasix 40	5 Amp	Aventis	40mg
Odement 40	20 tab.	Memphis	40mg.
Salex 40	20 tab	Kahira	40mg.
Salex 40	5 amp	Kahira	40mg.
Octosemide-K	10 tab.	Octoberpharma	40mg.+Kcl. 600 mg

Indapamide

Indication Essential hypertension

Dose 1 tablet per day, whatever the severity of the hypertension. Due to the mechanism of action – there is no need to follow a strict sodium-free diet.

Diurex 2.5	30 tab	Amriya	2.5 mg
Hypotense 2.5	20 tab	Adco	2.5mg
Natrilix 2.5	30 tab	Servier-Egyp.	2.5mg
Natrilix SR 1.5	30 tab	Servier-Egyp.	1.5mg
Indamide 2.5	30tab	Alex.	2.5mg

SR→is sustained release Formula – taken once or twice daily .

Section-3 Potassium-sparing diuretics

This group is usually used with thiazides or loop diuretics to counteract K loss which occur during the use of these agents.

Spironolactone

Spironolactone is a competitive inhibitor to aldosterone, it act at the distal portion of the renal tubules, it thus increase sodium water excretion, aldactone reach its full action after 2-3 days.

Uses Essential hypertension – Oedema due to Congestive heart failure (CHF) & nephritic syndrome – Liver Cirrhosis – Ascitis .

Dose Hypertension 50:100mg. One dose daily – kids 3mg./kg./day – CHF 25:200mg. Daily – Liver cirrhosis acc. To Na/K in blood if less than 1 200mg.

Aldactone 25	20 tab	Kahira /Searle	25mg
Aldactone 100	10 tab	Kahira /Searle	100mg
Epilactone 25	10 tab.	Eipico	25mg.
Potasave 25	10 tab	Acapi	25mg
Specton 100	10Tab.	Kahira	100 mg
Specton 25	20Tab.	Kahira	25 mg
Spiromide100	10 tab.	Sedico	100 mg.
Spironolactone 25	20 tab.	DeltaPharm	25mg.
Spironolactone 50	20 tab.	DeltaPharm	50mg.
Spironolactone 100	20 tab.	DeltaPharm	100 mg.

Meteni x5	100 tab.	Aventis	Metolazone 5mg.

Section-4 Preparations contain diuretics Combination

Amiloride 5mg.+

Hydrochlorothiazide 50mg

Properties and precautions of hydrochlorothiazide mentioned under thiazide group above ,

Uses Oedema due to Liver Cirrhosis – Nephrotic syndrome – CHF .

Hydikal	20 tab	Pharco	Amiloride 5mg.+ Hydrochlorothiazide 50mg
Moduretic	30tab	Kahira /MSD	Amiloride 5mg.+ Hydrochlorothiazide 50mg
Yostiretic	10 tab	Amoun	Amiloride 5mg.+ Hydrochlorothiazide 50mg
Atenoretic	20 Cap	Sigma /Queenph	Atenolol 50+ Amiloride 2.5+Hydrochlorothiazide. 25

Spironolactone Hydrochlorothiazide

Aldactazide	20 tab	Kahira /Searle	25mg. +25mg
Spirozide	20 tab.	Sedico	25mg. +25mg

✍ The combination of Diuretics which make potassium loss from the body like Frusemide or Hydrochlorothiazide

Spironolactone + Frusemide

Fructone	20Cap	Memphis	Spironolactone 50mg.+Frusemide 20mg.
Lasilactone	10 tab	Aventis	50mg.+ 20mg
Lasilactone	10 tab	Aventis	100/50mg

Xipamide +Triametrene

Epitens	30 tab	Eipico	10mg.+ 30mg

Triametrene is K sparing diuretic see properties and Side effects under K sparing diuretics above for the properties and precautions of xipamide see the thiazides diuretics above .

Section-5 Potassium Preparations

Uses with diuretics that cause Potassium loss from the body like Corticosteroids -& Thiazide Diuretics.(Bumetanide –Furesomide & Indapamide)

K-Chlor 300	Syrup	Misr	Pot.Chloride300mg./5ml
Potassium M	Syrup	Nile	Potasium chloride 165mg./5ml
Slow-K 600	20 tab	Novartis	Pot.Gluconate 600mg.

2 – Beta adrenergic blockers :

Section-1 Cardioselective Beta-blockers

General Uses of Betablockers

1-Antihypertensive:reduce cardiac output & decrease baroceptors reflux sensitivity

2-Angina by reduction of cardiac work.

3-preoperative preparation for thyroidectomy.

1- Atenolol

Mechanism is cardioselective and lack intrinsic sympathomimetic activity and membrane stabilizing (quinidine-like) properties .

Dose Angina & Hypertension 50:100mg./day max. 200mg. Daily

Atelol 100	20 tab	Pharco	100mg
Atelol 50	20 tab	Pharco	50mg
Ateno 100	20 tab	Eipico	100mg
Ateno 50	20 tab	Eipico	50mg
Atenolol 50	20 tab.	Jedco	50mg
Atenolol 100	20 tab.	Jedco	100mg.
Blokium 100	15 tab	Mup /Prodes	100mg
Blokium 50	15 tab	Mup /Prodes	50mg
Tenormin 100	14 tab	Kahira /ICI	100mg
Tenormin 50	14 tab	Kahira /ICI	50mg
Tensolol 100	20 tab	Memphis	100mg

2- Bisoprolol

Uses Coronary heart disease (angina pectoris) Stable chronic moderate to severe Heart faliure.

Dose one 5mg. tablet once daily is sufficient in most cases .the dose can be increased to 20 mg may be necessary in isolated cases.

Bisocard 5	20 tab.	GNP	Bisoprolol 5mg
Concor 5	20 tab	Amoun /Merck	Bisoprolol 5mg
Concor 10	20 tab	Amoun /Merck	Bisoprolol 10mg
Concor cor 2.5	20 tab	Amoun /Merck	Bisoprolol 2.5mg

Betaloc 100	20 tab	Metoprolol 100mg
Low Press 100	20 tab	Metoprolol 100mg

Betacor 80	10 tab	Sotalol Hcl 80mg

Non cardioselective Beta-blockers

Section-2 Alpha & Beta-receptors blockers

4- Carvedilol

Carvedilol is Nonselective Beta-blocker

Uses essential hypertension – chronic stable angina – chronic hear faliure

Dose start 12.5mg. – max 25mg./12hrs

Cardilol cs 25	20 tab.	GNP /Marcryl	25mg.
Carvena 12.5	10 Tab	DeltaPharm	12.5 mg
Carvid 25	10 Tab	Kahira /MultiPharm	25 mg
Carvid 6.75	20 tab.	Kahira /MultiPharm	6.75 mg
Carvediol	30 cap.	GNP/Biopharm	2.5mg.
Carvipress 12.5	10 Tab	GNP	12.5 mg
Dilatrend 6.25	30 tab	Roche	6.25mg
Dilatrend 25	30 tab	Roche	25mg
Dilatrol 6.25	20 tab.	ChemiPharm	6.25
Dilatrol 25	20tab	Chemicpham	25mg

Section-3 Calcium Channel blockers

Variable ankle oedema is a variable adverse effects of the ca-channel blockers.

Mechanism affect tissues in which depolarization depend on calcium influx rather sodium influx, these tissues include vascular smooth muscles, myocardial cells and cells within the sinu-atrial and atrieo-ventricular nodes,

Main Actions 1– dilatation of coronary and peripheral arteries and arteriols 2 – negative inotropic action 3 – a reduction of heart rate 5 – slowing of AV conduction

Amlodipine

Mechanism it is calcium inhibitor , it can be used in patients with renal impairment . Amlodipine & isradipine with general properties like Nifedipine

Uses Hypertension - Angina Pectoris .

Dose 5mg. Daily – the dose can be increased to 10mg. Daily.

Alkapress 5	10 tab	Alkan	5mg
Amilo 5	10 tab.	Acapi	5mg
Amlodipine 5	10 tab	Amriya	5mg.
Myodura 10	10 tab	Wockhardt	10mg
Myodura 5	10 tab	Wockhardt	5mg
Norvasc 5	10 tab	Pfizer	5mg
Norvasc 10	10 tab	Pfizer	10mg
Vasonorm 5	10Tab	Pharco	5 mg
Regcor 5	10 Tab	Eipico	5 mg

Deltiazem

Deltiazem inhibits the cardiac conduction at the SA and AV nodes, it has negative inotropic activity ,other properties see calcium channel blockers above

Altiazem 60	20 tab	Lusofarmaco/Eipico	60mg
Delay-tiazem S.R. 90	10 Cap	Gsk	90mg
Delay-tiazem S.R. 120	10 Cap	Gsk	120mg
Delay-tiazem S.R. 180	10 Cap	Gsk	180mg
Delay-tiazem S.R. 240	10 Cap	Gsk	240mg
Dilatcor-XL 180	10 Cap	Synthalabo/Amriya	180 mg
Mono-Tidiem 200	28 Cap	Synthelabo/Amriya	200mg
Mono-Tidiem 300	28 Cap	Synthelabo/Amriya	300mg
Peltiam 120	10 Cap	G.N.P	120mg
Peltiam 240	10 Cap	G.N.P	240mg
Slow –Zem 90	10cap	Pharaonia	90 mg
Tildiem 60	20 tab	Amriya /Synthalabo	60mg.

Felodipine

With low degree of ankle odema

Dose : 2.5:10mg. once daily according to the severity of hypertension.

Plendil 2.5	30 tab.	AstraZeneca/HealthyFamily	2.5mg.
Plendil 5	30 tab.		5mg.
Plendil 10	30 tab.		10mg.
Plentopine 2.5	10 tab.	SinaPharm/Arabcaps.	2.5mg.
Plentopine 5	10 tab.		5mg.
Plentopine 10	10 tab.		10mg.

Nimodipine

Nimotop 10	10 tab.	Bayer	10mg
Nimotop 10	50ml.Vials		10mg./50ml. for infusion

Nifedipine

Indications Chronic stable angina pectoris (exercise-induced angina) 🕮Vasospastic angina (Prinzmetal's or variant angina)⇨Essential hypertension (high blood pressure with no discoverable organic cause ⇨Raynaud's disease 🕮 Hypertensive emergency.

Dose 10:20mg. 3 times daily✍Since a very rapid onset of action is required in a hypertensive emergency, the capsule must be bitten through and swallowed immediately with its contents.

Adalat retard 20	30 Coated tab.	Alex./Bayer	20mg
Adalat 10	30 caps.		10mg
Epilat 10	30 Caps.	Eipico	10mg
Epilat Retard 30	20 tab.	Eipico	30mg.
Nifepin 10	24 Caps.	Pharco	10mg

Nicardipine Hcl

Micard 20	30 caps.	Misr	20mg.
Pelcard 50	20 caps.	GNP	50mg.

Lacidipine

Lacipil 2	7 tab.	Gsk	2mg.
Lacipil 4	7 tab.	Gsk	4mg.
Lodipine 2	7 tab.	UniPharma/ EgyPhar	2mg.

Section-4 Nitrates

Nitrates are : isosorbide dinitrate, isosorbide mononitrates, glyceryl trinitrates (nitroglycerin), pentaerythritol tetranitrate .

Isosorbide dinitrate

Nitrates relaxes smooth muscles including vascular muscles, and reduces the blood pressure,relaxing the coronary vessels and in turn reducing myocardial oxygen demand, this is the predominant Mechanism in vaso-spastic or prinzmetals angina .

Indications Prevention and long-term treatment of angina pectoris (cardiac pain due to circulatory disturbances in the coronary vessels⇨ treatment of severe combination with cardiac glycosides, preparations promoting the secretion of urine (diuretics), ACE inhibitors, drugs causing a dilation of the arterial blood vessels (arterial vasodilators)
⇨ High pressure in the pulmonary circulation (pulmonary hypertension)

Dose 5:20 mg daily✍If nitrate requirement is higher, the dose can be increased to 3 x 1 capsule with sustained action daily (equivalent to 3 x 20 mg of isosorbide dinitrate.

Cardiket Retard 20	20 tab.	Schwarz/ Minapharma	20mg.
Cardiket Retard 10	20 tab.	Minapharma /Schwarz	10mg.
Cardiket Retard 5	20 tab.	Minapharma /Schwarz	5mg.
Coronit 20	20 Caps.	Alex.	20mg.
Coronit 40	20 Caps.	Alex.	40mg.

Dinitra 5	30 tab.	Eipico	5mg.
Dinitra 10	60 tab.	Eipico	10mg.
Dinitra 20	20 tab.	Eipico	20mg.
Isomack 20	20 Caps.	Octobur Pharma /Mack	20mg.
Isomack 40	20 Cap	Octobur Pharma /Mack	40mg.
Isomack 1.25	Spray	Octobur Pharma /Mack	1.25mg /puff
Isordil 5	100 tab.	Ayrest	5mg.
Isordil 10	100 tab.	Ayrest	10mg.

Isosorbide mononitrate

Isosorbide mononitrate is an active metabolite of isosorbide dinitrate, and is used prophylactically in the treatment of angina pectoris.

Dose 20 mg. 2: 3 times daily – the continous dose rane is 20:120mg. Daily .

Cardiogaurd-M 20	10caps.	Gsk	20mg.
Cardiogaurd-M 40	10caps.	Gsk	40mg.
Effox 20	20 tab.	Minapharm /Schwarz	20mg.
Effox 40	20 tab.		40mg.
Effox 50	10 tab.		50mg.
Effox 25 long	30caps.		25mg.
Effox long 50	20Caps.		50mg.
Ismo 20	20 tab.	Roche	20mg.
Imdur 60	30 tab.	AstraZeneca/ HealthyFamily	60mg.
Monocard 50	20 Caps.	Chiesy/Nile	50mg.
Monomack 20	20 long-act Caps	Octobur Pharma /Mack	20mg.
Monomack 20	20 tab.		20mg.
Monomack 40	20 tab.		40mg.

Glyceryl Trinitrate = Nitroglycerin

Glyceryl trinitrate the effects of nitroglycerin sublingually occurs within 2-3 minutes and its action lasts for about 30-60minutes, tolerance may occurs with the regular use of nitroglycerin,but withdrawal for a short period may re-establish the original sensitivity,.there is a topical preparations of nitroglycerin which gives systemic effect and used as prophylactic therapy against anginal attack especially at night .

Dose 0.5mg. sublingual when attack – 2.5:12.5mg. orally acc. To patient response . Patches 1:2 patch daily.

Angised 0.5	100 tab.	Wellcome	0.5mg.
Nitrocare SR 2.5	30 S.g.caps.	T3A	2.5 mg.
Nitrocare SR 6.5	30 S.g.caps.	T3A	6.5 mg.
Nitrocare SR 9	30S.g.caps.	T3A	9 mg.
Nitromack Retard 2.5	10 Caps.	Mack	2.5mg.
Nitroderm-TTS 5	7 Patches	Novartis	5 mg.
Nitroderm-TTS 10	7 Patches	Novartis	10mg.
Nitroderm-TTS 15	7 Patches	Novartis	15mg.
Nitroguard 10	10 Caps.	Misr /Syntex	10mg.
Nitronal 1	50 ml. vial	Merck	1mg./ml.
Nitrostat 50	1 amp.	ParkDavis	50mg. /10ml.
Nitrotard 2.5	60 Caps.	Mup	2.5mg.

Deponit NT5 18.7	7 Patches	MinaPharm /Schwraz	18.7 mg.
Deponit NT10 37.4	7 patches	MinaPharm /Schwraz	37.4 mg.
Nitroderm delivers daily 0.2mg.			

Section-5 Angiotensin-enzyme inhibitors

Many Members of the Angiotensin converting enzyme inhibitors cause dry cough

Mechanism of this group inhibits the enzymes involved in the conversion of angiotensin-1 to angiotensin-2 .
2- inhibit the rennin-angiotensin-aldosteron system .
3- reduce the peripheral resistance,resulting in the reduction of the prelude and after –load in congestive heart failure .

Captopril

Mechanism is a specific competitive inhibitor of angiotensin- converting enzyme (ACE inhibitor) which is responsible for the conversion of angiotensin I to angiotensin II.

Indications hypertension. It may be used alone or in combination with other antihypertensive agents, especially thiazide type diuretics – patients with heart failure. It can be administered in heart failure. It can be administered with digitalis.

Dose 🕮 taken one hour before meal.
🕮 In hypertension: The initial dose is 25mg 2 or 3 times daily. This dose may be Increased to 50mg 2 – 3 times daily, after two weeks
🕮 diuretics may be co-administered if further reduction in high blood pressure is required.
🕮 In severe cases the dose may be increased gradually up to 450mg daily, while continuing the diuretic.🕮 The usual recommended dose is 25mg 3 times daily.

Capoten 25	20 tab.	BMS	25mg.
Capoten 50	10tab.	BMS	50mg.
Capotril 25	20 tab.	Eipico	25mg.
Capotril 50	20 tab	Eipico	50mg.
Hypopress 25	10 tab.	Amoun	25mg.
Hypopress 12.5	10 tab.	Amoun	12.5
Lotensine 25	20 tab.	Kahira	25mg.

Primox 15	14 Tab.	32.00	Schwarz/Minapharm	Moexipril HCl 15 mg.

Start dose 7.5mg. at morning – may be increased if need – can be used in ttt of hypertension alone or with other antihypertensives-not suitable for pregnants & lactants .

Enalapril

Mechanism It is Angiotensin Converting Enzyme Inhibitors (ACE Inhibitors).

Indications Essential hypertension – Renovascular hypertension
⇨Symptomatic improvement of heart failure and reduction of mortality in patients with all degrees of heart failure .

Dose maintenance Dose for adults : 10 to 20 mg once or twice daily.

Acapril 5	10 tab.	Acapi	5mg.
Enalapril 5	20 tab.	OctoberPharma	5mg.
Enalapril 20	20 tab.		20mg.
Ezapril 10	20 tab.	Kahira /MultiPharma	10mg.
Ezapril 20	20 tab.		20mg.

Lotrial 10	20 tab.	Schering	10mg.
Lotrial 20	20 tab.	Schering	20mg.
Renitec 5	7 tab.	MSD/GNP	5mg.
Renitec 20	7 tab.		20mg.
PressLight 5	10 tab.	O.P.I.	5 mg.
PressLight 10	10 tab.	O.P.I.	10mg.

Fosinopril

Monopril 10	10 tab.	BMS	Fosinopril 10mg.
Monopril 20	10 tab.	BMS	Fosinopril 20mg.

Lisinopril

Indications essential hypertension and in renovascular hypertension. It may be used alone or concomitantly with other classes of antihypertensive agents 📖 2- congestive heart failure as an adjunctive" treatment with diuretics and, where appropriate, digitalis.
📖 3- to prevent the subsequent development of left ventricular dysfunction or heart failure and to improve survival. Patients should receive, as appropriate, the standard recommended treatments such as thrombolytics, aspirin and beta-blocker.

Dose Congestive Heart Failure As adjunctive therapy with diuretics ⇨initiated with a dose of 2.5 mg once a day. The usual effective Dose range is 5 to 20 mg per day administered in a single daily dose.

Lisopril 10	10 tab.	HiPharm	10mg.
Lisinopril 10	20 Tab.	Sigma /Queen	10 mg.
Sinopril 5	20 tab.	GNP	5mg.
Sinopril 10	10 tab.	GNP	10mg.
Sinopril 20	10 tab.	GNP	20mg.

Zestril 5	10 tab.	Sedico/ Astra Zeneca	5mg.
Zestril 10	10tab.		10mg.
Zestril 20	10 tab.		20mg.
Cibacin 5	7 tab.	Novartis	Benzapril 5mg.
Cibacin 10	7 tab.	Novartis	Benzapril 10mg
Cibacin 20	7 tab.	Novartis	Benzapril 20mg.
Coversyl 2	10 tab.	Servier	Perindopril 2mg.
Coversyl 4	15 tab.		Perindopril 4mg.
Coversyl 8	30 tabs.		Perindopril 8mg

Coversyl Dose 📖 Systemic hypertension 1 tablet daily taken orally in the morning. This may be increased tablets daily in a single dose, if necessary, after one month of ttt
📖 Congestive heart failure: 2mg. daily in the morning may be increased to 1 tablet daily

Ramipril

Mechanism It is Angiotensin Converting Enzyme Inhibitors (ACE Inhibitors).
Angiotensinogen ----(Renin/kidney)---→ Angiotensin I ----(ACE/lung)--→ Angiotensin II → 1- increase aldosterone → Na & water retention → increased BP.
2- Inrease sympathetic blood flow --→ Vasoconstriction .
3- decrease bradykinins --→ Vasoconstriction .
With ACEIs the above mechanisms for the elevation of blood pressure are reversed

Indications essential hypertension and in renovascular hypertension. It may be used alone or concomitantly with other classes of antihypertensive

agents			
Corpril 1.25	7 caps	Pharco /Rexcel	1.25mg.
Corpril 2.5	7 caps		2.5mg.
Corpril 5	7 caps		5mg.
Ramipril 1.25	7 caps	Pharonia	1.25mg.
Ramipril 2.5	7 caps	Pharonia	2.5mg.
Ramipril 5	7caps.	Pharonia	5mg.
Tritace 1.25	7 tab.	Aventis	1.25mg.
Tritace 2.5	7 tab.	Aventis	2.5mg.
Tritace 5	7 tab.	Aventis	5mg.
Tritace Protect 10	10 tab.	Aventis	10mg.

Tritace Protect used once daily for prevention of heart attacks and stroke

Section-6 Angiotensin II Receptors Blocker s (ARBS)

Mechanism Actions of Angiotensin II has both direct and indirect involvement in the regulation of blood pressure. As a potent vasoconstrictor, angiotensin II exerts a direct pressor response. In addition it promotes sodium retention and stimulation of aldosterone secretion.

Indications Treatment of mild to moderate essential hypertension.

Dose once daily, irrespective of race, age, or gender. 🕮can be taken with liquid during or between meals 🕮It is recommended to be taken at the same time every day, e.g. in the morning. 🕮 if no adequet response dose Can be increased to the double , or a diuretic may be added. 🕮No Dose adjustment is required for patients with renal

Candesartan cilexetil

Atacand 4	28 tab.	AstraZeneca/HealthyFamily	4mg.
Atacand 16	28 tab.		16mg.
Candesar 4	14tab.	Pharaonia	4mg
Candesar 8	14tab.		8mg

Losartan Potassium

Losartan potassium preparations are film-coated tablets = (F.C.T)

Amosar 25	10 tab.	Amoun	25mg
CozAAr 5	14 tab.	GNP /MSD	50mg
CozAAr 100	14 tab.		100mg
Kanzar 25	14 tab.	Alkan	25mg
Kanzar 100	8 tab.	Alkan	100mg
Losar 50	7 tab.	UniPharma	50mg
Lozapress 25	14 tab.	Sigma	25mg
Lozapress 50	14 tab.	Sigma	50mg
LosarMepha 50	7 tab.	MUP /Mepha	50mg
Losartan 50	10 tab.	Amriya	50mg
Remtozar 100	10 tab.	Mepaco/ Meivo	100mg

Valsartan

Uses Ttt of hypertension & heart failure

Dose 80mg. daily irrespective of age ,Race or gender

Diovan 160	28 caps.	Novartis	Valsartan 160mg.
Disartan 80	7 caps.	GNP	Valsartan 80mg.
Disartan 160	7 caps.	GNP	Valsartan 160mg.
Tareg 80	7 Caps.	Novartis	Valsartan 80mg.
Tareg 160	7 Caps.	Novarti	Valsartan

		s	160mg.

Irbesartan

Aprovel 150	14tab	Sanofi/ Ramco	Irbesartan150mg.
Aprovel 300	14 tab	Sanofi/ Ramco	Irbesartan300mg.

Telmisartan

Micardis 40	14cap.	Boehringer Ingel.	Telmisartan 40mg.
Micardis 80	14 cap.	Boehringer Ingel.	Telmisartan 80mg.

Section-6 Centrally-acting Anti-Hypertensives

Methyldopa 250mg

Mechanism It stimulates the alpha-2-adrenoreceptor in the CNS result in reduction in the sympathetic tone and fall in blood pressure, methyldopa reduce the tissue concentration of dopamine, adrenaline,nor-adrenaline and serotonin.

Uses anti-hypertensive – used safety used during pregnancy

Dose Usually 250 mg 2:3 times a day, Adjustment: at intervals of not less than two days, The maximum recommended daily max. Dose 3 gm Daily

Adamat 250	30Cap	ADWIC	250mg.
Aldomet 250	30 tab.	Kahira /MSD	250mg.
Aldomet 250	5 amp.	Kahira /MSD	250mg.
Epidopa 250	30 tab.	Eipico	MethylDopa 250
Farcodopa	20 tab.	Pharco	250mg.
Kadomet 250	20Tab	Kahira	250mg.

Minipress 1	30 tab.	Pfizer	Prazosin 1mg.
Minipress 2	30 tab.	Pfizer	Prazosin 2mg.

Minipress Selective alpha-one blocker

Uses & Dose hypertension and CHF : 0.5 mg 2-4 times daily, the initial dose on retiring to bed to avoid collapse, increased gradually up to maximum 20mg. daily. Raynau syndrome 0.5mg. twice daily and maintenance dose 1-2mg. twice daily

Rogitine 10	5 Amp.	Novartis	Phentolamine 10 mg / ml / amp. (I.V.)

Section – 7 Vasodilator antihypertensive

Sodium Nitroprusside

Mechanism It acts by relaxation of vascular smooth muscle; consequently it dilates peripheral arteries and veins. It is more active on veins than on arteries. It reduces both preload & afterload which will reduce workload on the heart.

Dose Adults Hypertensive crisis : i.v. 0.3-1mcg / kg / minute initially, then adjusted; lover doses for patients already being reated with antihypertensives.

Heart failure by i.v. infusion initially 10-15mcg / kg/ minute, increase every 5-10 minutes as necessary, usual range 10-200mcg / kg / minute.

Na Nitroprusside 50	1 Vial	Faulding	50mg
Niprid 50	5 vial	Roche	50mg
Nipruss 60	5 amp.	Schwarz	60mg

		Pharma	

1

Imidazoline Receptor antagonist

Cynt 0.2	20 tab.	Lilly	Moxonidine 0.2mg
Cynt 0.3	20 tab.	Lilly	Moxonidine 0.3mg.
Hyperium 0.4	20 tab.	Servier-	Rilmenidine 0.4mg.
Hyperium 1	*10 tab.*	Servier-	Rilmenidine 1mg.

Section-8 Multi-ingredient antihypertensives

Atenolol +Chlorthalidone

Blokium Diu.	15 tab	MUP	*100mg+25mg*
Tenedone	20 tab	Sigma	*50mg.+ 25mg*
Tenedone	20 tab.	Sigma	*100mg.+ 25mg*
Tenolat SR	*20 Cap*	*Tiba/Sigma*	*Atenolol + Nifedipine*

Atenolol + Amiloride

Atenoretic	20caps	Queen/Sigma	Atenolol 50mg.+HCT 25mg+Amiloride hcl 2.5mg.
Teklo	10 tab	Acapi	Atenolol 100mg+ Amiloride 5mg+
Hipres-D	20caps	Rameda	Atenolol 50mg+ Amiloride 2.5mg+hydrochlorothiazide 25mg.

Benazapril +Hydrochlorothiazide

Cibadrex	7 tab	Novartis	Benazapril 10mg+ Hydrochlorothiazide 12.5mg
Cibadrex	7 tab	Novartis	Benazapril + Hydrochlorothiazide 20/25mg

Bisoprolol 10mg.+ Hydrochlorothiazide

Lodoz 2.5	30 tab.	Merck/Amoun	Bisoprolol 2.5mg.+ Hydrochlorothiazide 6.25mg.
Lodoz 5	30 tab.	Merck/Amoun	Bisoprolol 5mg.+ Hydrochlorothiazide 6.25mg.
Lodoz 10	30 tab.	Merck/Amoun	Bisoprolol 10mg.+ Hydrochlorothiazide 6.25mg.
Concor-5 plus	20 tab	Merck/Amoun	Bisoprolol 5mg.+ Hydrochlorothiazide 12.50mg

Captopril + Hydrochlorothiazide

Captopril is ACE inhibitor (see capoten above Hydrochlorothiazide is a Thiazide diuretic)

Capozide	30 tab	BMS	Captopril 50mg.+ Hydrochlorothiazide 25mg
Farcopril plus	20 tab.	Pharco	Captopril 50mg.+ Hydrochlorothiazide 25mg.
Capojed-H	20 tab.	Jedco	Captopril 50mg.+ Hydrochlorothiazide 25mg.
Hypopres	20 tab.	Amo	Captopril

s-D		un	50mg.+ Hydrochlorothiazide 25mg.

Enalapril maleate +Hydrochlorothiazide

اينالابريل (مخفض لضغط الدم) + هيدروكلوروثيازيد مدر للبول

Co-Renitec	7 tab	MSD	20mg.+ 12.5mg
Enalazide	10 tab	Acapi	10mg+1.5 mg
Ezapril-Co	20 tab	Kahira	20mg+12.5 mg
Thiazopril	10 tab	October Pharma	20mg+12.5 mg

Fosinoopril + Hydrochlorothiazide

Monozide	10 tab	BMS	Fosinoopril 10mg.+ Hydrochlorothiazide12.50
Monozide	10 tab	BMS	Fosinoopril 20mg.+ Hydrochlorothiazide 12.50

Lisinopril+Hydrochlorothiazide

Lisitens	10 tab	Hi Pharm	20mg+ 12.5mg
Sinopril Co	20 tab.	GNP	20mg+12.50 mg
Zestoretic	20 tab	Zeneca	20mg+12.50 mg

Reserpine 0.1mg+Clopamide 5mg+Dihydroergocristine

Reserpine Mechanism is an antihypertensive agent which causes depletion of the noradrenaline stores in peripheral S.N.terminalis and depletion of catecholamine and serotinine stores in the brain, heart and many other organs resulting in reduction in blood pressure,

Clopamide is a thiazide diuretic.

Uses ttt of all kinds of hypertension

Dose one tab. Daily .

Brinerdin	30 tab	Novartis	Reserpine 0.1mg+Clopamide 5mg+Dihydroergocristine 0.5mg
Hypoten	30 tab	Pharco	Reserpine 0.1+Clopamide 5mg.+Dihydroergocristine 0.5mg

Losartan k 50mg.+ Hydrochlorothiazide

Fortzaar	8 tab	MSD	100mg.+ 25.00
HyzAAr	14 tab	MSD	50mg. + 12.50
Hysartan	10 tab	Amriya	50mg. + 12.50
Kanzar-H	8 tab.	Alkan	50mg. + 12.50
Loraz	14 tab.	MinaPharm /EGD	50mg. + 12.50
Losarmepha-Plus	7 tab.	Mepha/Sigma	50mg. + 12.50
Remtozar-D	10 tab	Meivo/Mepaco	100mg.+ 25.00
Modazar	8 tab.	UniPharma / EgyPhar	100mg.+ 25.00

Fortazaar is adouble concentration of Hyzaar .

Rampiril 5mg.+ Hydrochlorothiazide

Tritace Comp	7 tab	Aventis	Ramipril 5mg.+ 25mg
Tritace Comp LS	7 tab	Aventis	Ramipril 2.5mg.+ Hydrochloro.. 12.5mg.

Telmisartan + Hydrochlorothiazide

Micardis	14 caps.	Boehringer	Temisartan	Antihypertensive

Plus 40			40mg.+ Hydrochlorothiazide12.5	combination
Micardis Plus 80	*14 caps.*	*Boehringer*	*Temisartan 40mg.+ Hydrochlorothiazide12.5*	*Antihypertensive combination*

Valsartan + Hydrochlorothiazide

Co-Diovan	10 Tab	Novartis	*Valsartan + Hydrochloroyhiazide 160 mg./ 25 mg.*
Co-Tareg	14 tab	Novartis	*Valsartan 80mg.+ Hydrochlorothiazide 12.50mg*
Co-Tareg	*14 tab*	*Novartis*	*Valsartan 160/ Hydrochlorothiazide 12.5mg*

Felodipine+Metoprolol

Logimax	30 depo tab.	AstraZeneca/HealthyFamily	Felodipine 5mg.+Metoprolol 50mg

Perindopril+ Indapamide

BiPreterax	14 tab	Servier	Perindopril 4+Indapamide 1.25mg
Preterax	14 tab	Servier	Perindopril 2+Indapamide 0.625mg

Atacand Plus	28 tab	A.Zeneca/H.Family	Candesartan cilexetil 16mg.+ hydrochlorothiazide12.50
CoAprovel	14 tab	Sanofi/ Ramco	Irbesartan 300+ hydrochlorothiazide12.50
Normaten	20 tab	Rameda	Captopril 33mg.+ Indapamide 3mg.
Tarka	28tab	Abbott	Verapamil hcl 180+

			Trandolapril 2mg.

HCT = Hydrochlorothiazide
Clopamide is a thiazide diuretic.
Dihydroergocristine inhibits the hypertensive response to stress.

Adrenergic and dopaminergic agents

Dobutrex 12.5	20ml. vial	Lilly	Dobutamine 12.5mg./ml. i.v.(diluted in i.v. infusion)
Dobutamine 12.5	1 vial	Abbot	Dobutamine12.5 mg./ml. 20ml.
Dopamine 200	1 amp.	Fresenius	Dopamine 200mg./5ml.
Intropin 200	1 amp.	Dupont	Dopamine 200mg./5ml.
Adrenaline 1	1 amp.	Memphis	Adrenaline 1mg./1ml.
Isuprel 0.2	25 amp	Sanofi	Isoprenaline 0.2mg./1ml.
Isuprel 0.2	10 amp	Sanofi	Isoprenaline 0.2mg./1ml. (0.5-10 mcg./minute)

Dobutamine is inotropic sympathomimetic, act on B1 receptors in cardiac muscle, increase contractility with little effect on rate .
Isoprenaline less selective B1 agonist, increase both heart rate & contractility .

Natural Preparation Used as mild Anti-Hypertensives

المنتجات الطبيعية المخفضة لضغط الدم المرتفع

Hybisc 300	20 caps.	Pharma Net	Hibiscus Sabdariiffa 300mg.
Master	30 tab.	ArabCaps/Na	Hibiscus Sabdariiffa

Hibiscus		pha	300mg.
Royatens	10 sachets	Ottoman	Hibiscus +Olea europea+ Chammomile

Digoxin and Anti-arrhythmic Drugs

Digoxin *الديجوكسين - مقو لعضلة القلب*

Mechanism actions of digoxin are : 1 an increase in the force of myocardial contraction 2reduction in the conductivity of the atreoventricular(A.V.) node
3 increase the vagal activity .

Uses 1- digoxin is used to slow the ventricular rate in the management of arterial fibrillation, 2- used in ttt of congestive heart failure (CHF) with arterial fibrillation .
Starting dose 0.75:1.5mg. starting dose then 0.25mg. daily – due to its accumulative effect , therapy should be stopped one day every week. E.g. every Friday .

Digicap 0.1	20 caps	E.E.Ph.Co.	0.1mg
Digicap 0.2	20 Cap	E.E.Ph.Co.	0.2 mg
Cardicaps 0.1	20 Cap	Alexandria	0.1mg
Cardicaps 0.2	20 Cap	Alexandria	0.2mg
Cardiocaps 0.25	20 cap	Minapharm	Digoxin 0.25mg
Cardixin 0.25	40 tab	Alex	Digoxin 0.25mg
Cardixin	6 amp.	Alex	Digoxin
Cardixin	60 ml. syrup	Alex	0.05%
Lanoxin 0.25	100 tab	Wellcome/ Gsk	Digoxin 0.25mg
Lanoxin 0.5	5amp	Wellcome/ Gsk	0.5mg./2 ml
Lanoxin 0.05%	Elixir	Wellcome/ Gsk	0.05%
Cardioton 300	20 tab	Atos	Cataegus ext. 300mg

it contains flavonoid glycosides with cardiotonic properties similar to digoxin

Section-2 Anti-Arrhythamic Agents *الادوية المنظمة لضربات القلب*

CLASS A

Includes drugs which are directly interfere with depolarization of the cardiac membrane
(membrane stabilizing agents) by blocking the fast inward current of sodium into cardiac cells, they also have local anesthetic properties.

Quinidine sulphate *منظم لضربات القلب سلفات الكينيدين*

📖 has direct myocardial effect because it has is sodium channel blocker effect .
📖 also has indirect on the myocardium (has atropine-like action)

Uses Quinidine is used in recent cases of auricular fibrillation without congestive Heart failure and multiple auricular extrasystole.

Quinacard S.R. 200	20 tab	Nile	200mg
Quinidine Sulphate 200	10 tab	Amoun	Quinidine Sulphate 200mg.
Quinidine sulphate	20 tab	Nile	200mg

200			
Rytmonorm 150	10 tab	Knoll/Adco	Propafenone 150mg

Rytmonorm Uses ventricular arrhythmias, atrial fibrillation and atrial flutter, paroxysmal atrio-ventricular nodal re-entrant tachycardia.
Dose 450:600mg. Starting dose, then dose adjusted acc. To ECG & B.P.

Tambocor	60 tab.	3M Health Care limited	Flecainide acetate 100mg.
Tonocard	100 tab	Astra/HealthyFamily	Tocainide Hcl 400mg
Tonocard	5Vial		Tocainide 50mg./ml
Xylocard	5ml. amp		Lignocaine Hcl 20mg./ml
Xylocard	5ml.amp		Infusion contain 200mg/ml

Tambocor anti-arrhthmic – regulates the rate & rhythm of the heart .

CLASS B (drugs with antisympathetic properties.)

Propranolol *بروبرانولول - لضغط الدم المرتفع – ومنظم لضربات القلب*

Indication 1- Control of hypertension
2 Management of angina pectoris.
3- Long term prophylaxis after recovery from acute myocardial infarction.
4- Control of cardiac arrhythmias Prophylaxis of migraine
5- Management of essential tremor,
6- Control of anxiety and anxiety tachycardia,
7- Adjunctive management of thyrotoxicosis and thyrotoxic crisis ix)
8- Management of hypertrophic obstructive cardiomyopathy.
9- Management of phaeochromocytoma

Dose Since the half-life may be increased in patients with significant hepatic or renal impairment, start with minimum dose & increase gradually with weekly intervals .
Angina 20:40mg./6hrs. max. 200:280 mg. Daily .Cardiac arrhythmia :10:40mg.
Daily☞Cessation of therapy with a beta-blocker should be gradual.

Inderal 40	50 tab	Kahira /ICI	Propranolol 40mg
Inderal 10	50 tab	Kahira /ICI	10mg
Inderal 1	10 amp	Kahira /ICI	1mg./ml

CLASS C drugs increase the duration of the cardiac potential

Amiodarone *اميودارون*

Uses control of ventricular and superventricular arrhythmia where other drugs can not be used .
Dose 5mg./kg./day on 2:3 doses .

Cardiomep 200	30 tab.	Mepaco	200mg
Cordarone 200	30 tab	Sanofi	200mg
Cordarone 150	6 amp	Sanofi	150mg./3ml. amp
Farcodarone 200	10 tab	Pharco	200mg
Ronecard 200	30 tab	T3A	200mg

Norpace 100	20 caps.	Searle/Kaahira	Disopyramide 100mg.
Rythmodan 50	5ml X 5amp.	Aventis	Disopyramide 50mg.

Brivebloc 10	20 Vials	Sanofi - Winthrop	Esmolol 10mg/ml

Esmolol is indicated in short term ttt of supraventricular arrhythmias (include atrial flutter , sinus tachycardia), tachycardia and hypertension in peri-operative period.

Dose 50:200µgm./kg./minute – I.V.

Mexitil 200	100 tab	Bohringer	Mexitiline hcl 200mg (class Ib)

CLASS D Calcium channel blockers
(block the slow inward calcium current)

Verapamil فيراباميل - مضاد للزبحة الصدرية وضغط الدم المرتفع

Indications Hypertension. .⇨it is suitable for the treatment of all types of hypertension: for monotherapy in mild to moderate hypertension, combined with other antihypertensives – in particular with diuretics & with ACE inhibitors

Dose Angina 120mg. 2:3 times – Hypertension 160mg./12 hrs. max. 480mg. Daily

Cardiomil SR 120	10 caps.	Sigma	120mg.
Cardiomil SR 240	10 caps.	Sigma	240mg.
Isoptin 80	20 tab	Nile /Knoll	80mg
Isoptin retard 240	10 tab	Nile /Knoll	240mg
Verpamil 40	20 tab	ADWIC	40mg
Verpamil 80	20 tab	ADWIC	80mg
Veratens 40	10 tab	Pharaonia	40mg
Veratens 80	10 tab	Pharaonia	80mg
Veratens 180	10 tab	Pharaonia	180mg.
Veratens 240	10 cap	Pharaonia	240mg

Digitalis toxicity

Definition Digitalis is a medication prescribed to certain heart patients. Digitalis toxicity is a complication of digitalis therapy, or it may be caused by an acute ingestion of digitalis.

Causes, incidence, and risk factors

Digitalis toxicity can be caused by high levels of digitalis in the body, or a decreased tolerance to the drug. Patients with decreased tolerance may have "normal" digitalis levels.

Digitalis toxicity can occur from a single exposure or chronic overmedication, or it may occur in patients with normal blood levels of digitalis if other risks are present.

Risks include taking digitalis medications such as digoxin or digitoxin, along with medications that interact with digitalis such as

quinidine, verapamil, amiodarone, and others.

People with heart failure are commonly given diuretics (medications used to pull excess fluid from the body) along with digoxin. Many diuretics can cause potassium loss. Low levels of potassium in the body increase the risk of digitalis toxicity. Digitalis toxicity may also result from low levels of magnesium in the body.

Reduced kidney function will cause digitalis to accumulate in the body rather than being excreted normally through urine. Therefore, any disorders that disrupt kidney functioning (including dehydration) make digitalis toxicity more likely.

Symptoms

- Visual changes (unusual)
    - Halos or rings of light around objects
    - Seeing lights or bright spots
    - Changes in color perception
    - Blind spots in vision
    - Blurred vision
- Confusion
- Loss of appetite
- Nausea, vomiting, diarrhea
- Palpitations
- Irregular pulse

Additional symptoms that may be associated with digitalis toxicity include:

- Decreased urine output
- Excessive nighttime urination
- Overall swelling
- Decreased consciousness
- Difficulty breathing when lying down

Signs and tests

- The heart rate may be rapid or slow and it may be irregular
- ECG may show any of a variety of arrhythmia.
- Serum levels of digoxin or digitoxin may be high or normal (digoxin - test, digitoxin - test).
- A blood chemistry test to determines the levels of potassium and magnesium; creatinine and BUN are performed to evaluate kidney functioning.

Complications

- arrhythmia including lethal arrhythmias
- Heart failure

Treatment

- Stop digitalis intake .

- In an emergency, assist breathing as needed .

- Insertion of a pacemaker in severe poisoning .

- arrhythmia are treated according to which arrhythmia develops.

- If toxicity is from a recent, acute single exposure, gastric lavage (pumping the stomach) may be

performed, and charcoal is given. Digitoxin levels may reduce with repeated doses of charcoal. Lavage is recommended over inducing vomiting because vomiting can aggravate slow heart rhythms.

- **Treatment** of hypo- & hyperkalemia:

A) Hypokalemia : by i.v. KCL in saline infusion .

B) Hyperkalemia : 50 ml ca gluconate 10 % i.v. over 10 min. (100 ml dextrose 50 5 + 30 units soluble insulin + 100 ml Na HCO3 8.4 % i.v. over 15 min.)

Hemodialysis may be required to reduce the levels of digitalis in the body.

Prevention

Digitalis levels should be monitored regularly if patient is taking digitalis medications. Blood chemistries should also be monitored to detect conditions that make digitalis toxicity more common.

Potassium supplements may be prescribed if diuretics and digitalis are used simultaneously, or a potassium-sparing diuretic may be prescribed.

Chapter-8
Psychological Disorders

Anxiety

Syptoms :

Irritaility , restlessness , autonomic hyperactivity .

Different Kinds of Anxiety :-

- Panic Disorder—Repeated episodes of intense fear that strike often and without warning. Physical symptoms include chest pain, heart palpitations, shortness of breath, dizziness, abdominal distress, feelings of unreality, and fear of dying.
- Obsessive-Compulsive Disorder—Repeated, unwanted thoughts or compulsive behaviors that seem impossible to stop or control.
- Post-Traumatic Stress Disorder—Persistent symptoms that occur after experiencing or witnessing a traumatic event such as rape or other criminal assault, war, child abuse, natural or human-caused disasters, or crashes. Nightmares, flashbacks, numbing of emotions, depression, and feeling angry, irritable or distracted and being easily startled are common. Family members of victims can also develop this disorder.
- Phobias—Two major types of phobias are social phobia and specific phobia. People with social phobia have an overwhelming and disabling fear of scrutiny, embarrassment, or humiliation in social situations, which leads to avoidance of many potentially pleasurable and meaningful activities. People with specific phobia experience extreme, disabling, and irrational fear of something that poses little or no actual danger; the fear leads to avoidance of objects or situations and can cause people to limit their lives unnecessarily.
- Generalized Anxiety Disorder—Constant, exaggerated worrisome thoughts and tension about everyday routine life events and activities, lasting at least six months. Almost always anticipating the worst even though there is little reason to expect it; accompanied by physical symptoms, such as fatigue, trembling, muscle tension, headache, or nausea.

Treatment

- Selective serotonin reuptake inhibitors (SSRIs).
Such as R / Lustral (setraline) tab.
قرص واحد يوميا

Or : Prozac (Fluoxetine) cap.
كبسولة واحدة يوميا

- Sedative such as
R / Clamepam 1.5 or 3 mg tab.
Or : Valinil 5 mg tab.

نصف -١ قرص ١-٢ مرة يوميا

- Beta-blockers if autonomic symptoms as palpitation such as :
R / Inderal (propranolol) 10 mg tab.
نصف – ١ قرص ٣ مرات يوميا حسب الحالة

- Psychotherapy used to treat anxiety disorders are behavioral therapy and cognitive-behavioral therapy.

Alzheimer's disease = AD

Alzheimer's disease (AD), also known simply as Alzheimer's, is a neurodegenerative disease characterized by progressive cognitive deterioration together with declining activities of daily living and neuropsychiatric symptoms or behavioral changes. It is the most common type of dementia خرف الشيخوخة.

The most striking early symptom is loss of short term memory (amnesiaالنسيان), which usually manifests as minor forgetfulness that becomes steadily more pronounced with illness progression, with relative preservation of older memories. As the disorder progresses, cognitive (intellectual) impairment extends to the domains of language (aphasia), skilled movements (apraxia عسر التناسق فى المشى), recognition (agnosia), and those functions (such as decision-making and planning) closely related to the frontal and temporal lobes of the brain as they become disconnected from the limbic system, reflecting extension of the underlying pathological process. These changes make up the essential human qualities, and thus AD is sometimes described as a disease where the victims suffer the loss of qualities that define human existence.

Pathology : neuronal loss or atrophy, principally in the temporoparietal cortex.

History

Discovered by Dr. Alois Alzheimer, a German psychiatrist.

☞ For most of the twentieth century, the diagnosis of Alzheimer's disease was reserved for individuals between the ages of 45-65 who developed symptoms of presenile dementia قبْلَ الشيخوخة خرف

Clinical features :The first symptom noticed is short term memory loss which progresses from seemingly simple and often fluctuating forgetfulness

Stages and symptoms

a. Mild — At the early stage of the disease, patients have a tendency to become less energetic or spontaneous
b. Moderate : the patient might still be

able to perform tasks independently, but may need assistance with more complicated activities.

c. Severe :the patient will undoubtedly not be able to perform even the simplest of tasks on their own and will need constant supervision. They may even lose the ability to walk or eat without assistance.

Diagnosis: a definitive diagnosis تشخيص جازم of Alzheimer's disease must await microscopic examination of brain tissue, generally at autopsy. Functional neuroimaging studies such as PET (PET) is a nuclear medicine medical imaging technique which produces a three-dimensional image or map of functional processes in the body. and SPECT = (Single photon emission computed tomography = is a nuclear medicine tomographic imaging technique using gamma rays) scans can provide a supporting role where dementia is clearly present

☞ Psychological testing ☞focuses on memory, attention, abstract thinking, the ability to name objects, visuospatial abilities, and other cognitive functions.

Biochemical characteristics

Alzheimer's disease has been identified as a protein misfolding disease due to the accumulation of abnormally folded amyloid beta protein in the brains of AD patients.

Risk reducers

☞ Intellectual stimulation (e.g., playing chess or doing a crossword)
☞ Regular physical exercise
☞ Regular social interaction
☞ A Mediterranean diet with fruits and vegetable and low in saturated fat , supplemented in particular with B vitamins
☞ Omega-3 fatty acids, especially Docosahexaenoic acid
☞ High doses of the antioxidant Vitamin E (in combination with vitamin C) seem to reduce Alzheimer's risk .
☞ Cholesterol-lowering drugs (statins) reduce Alzheimer's .
☞ Large doses of non-steroidal anti-inflammatory drugs (NSAIDs), used to reduce joint inflammation and pain, have a reduced likelihood of developing AD, according to some studies.

Risk factors

a. Advancing age
b. Reduced testosterone levels.
c. Poor cardiovascular health (including smoking, diabetes, hypertension, high cholesterol.

Treatment

1- There is currently no cure for Alzheimer's disease.
2- Currently available medications offer relatively small symptomatic benefit for some patients but do not slow disease progression E.g. Acetylcholinesterase inhibitors =AChE was thought to be important because there is a reduction in activity of the cholinergic neurons. AChE-inhibitors reduce the rate at which acetylcholine (ACh) is broken

down and hence increase the concentration of ACh in the brain (combatting the loss of ACh caused by the death of the cholinergin neurons). Acetylcholinesterase-inhibitors seemed to modestly moderate symptoms but do not alter the course of the underlying dementing process. Examples include:

Donepezil - (marketed as Aricept , Donezil & Donipezil) .
Rivastigmine - (marketed as Exelon) .

3- NMDA antagonists Recent evidence of the involvement of glutamatergic neuronal excitotoxicity causes Alzheimer's disease led to the development and introduction of memantine. Memantine is a novel NMDA receptor antagonist, and has been shown to be moderately clinically efficacious. Memantine is marketed as Ebixa

4- interventions التدخلات and rehabilitation إعادة التأهيل strategies may be used as an adjunct to pharmacologic treatment
5- Vitamin E in doses below 400 IU was mentioned as having conflicting evidence in efficacy to prevent AD.

Schizophrenia

Definition

Schizophrenia is a mental disorder. It difficult for a person to tell the difference between real and unreal experiences, to think logically, to have normal emotional responses to others, and to behave normally in social situations.

Causes, incidence, and risk factors

Schizophrenia is a complex and puzzling الحيرة illness. Even the experts in the field are not exactly sure what causes it. Some doctors think that the brain may not be able to process information correctly.

Genetic factors appear to play a role, as people who have family members with schizophrenia may be more likely to get the disease themselves. Some researchers believe that events in a person's environment may trigger schizophrenia. For example, problems during intrauterine development (infection) and birth may increase the risk for developing schizophrenia later in life.

Psychological and social factors may also play some role in its development. However, the level of social and familial support appears to influence the course of illness and may be protective against relapse المعاودة .

There are 5 recognized types of schizophrenia: catatonic, paranoid, disorganized, undifferentiated, and residual. Features of schizophrenia include its typical onset before the age of 45, continuous presence of symptoms for 6 months or more, and deterioration from a prior level of social and occupational functioning.

People with schizophrenia may show a variety of symptoms. Usually the illness develops slowly over months or even years. At first, the symptoms may not be noticed. For

example, people may feel tense, may have trouble sleeping, or have trouble concentrating. They become isolated and withdrawn, and they do not make or keep friends. As the illness progresses, psychotic symptoms develop:

- Delusions - false beliefs or thoughts with no basis in reality
- Hallucinations - hearing, seeing, or feeling things that are not there
- Disordered thinking - thoughts "jump" between completely unrelated topics (the person may talk nonsense)
- Catatonic behavior - bizarre غريب motor behavior marked by a decrease in reactivity to the environment, or hyperactivity that is unrelated to stimulus
- Flat affect - an appearance or mood that shows no emotion

No single characteristic is present in all types of schizophrenia. The risk factors include a family history of schizophrenia. Schizophrenia is thought to affect about 1% of the population worldwide.

Schizophrenia appears to occur in equal rates among men and women, but women have a later onset. For this reason, males tend to account for more than half of patients in services with high proportions of young adults. Although the onset of schizophrenia is typically in young adulthood, cases of the disorder with a late onset (over 45 years) are known.

Childhood-onset schizophrenia begins after the age of 5 and, in most cases, after relatively normal development. Childhood schizophrenia is rare and can be difficult to differentiate from other pervasive developmental disorders of childhood, such as autism التفرد.

Symptoms

Catatonic type:

- Motor disturbances
- Stupor
- Negativism
- Rigidity
- Agitation
- Inability to take care of personal needs
- Decreased sensitivity to painful stimulus

Paranoid type:

- Delusional thoughts of persecution or of a grandiose nature
- Anxiety
- Anger
- Violence
- Argumentativeness

Disorganized type:

- Incoherence (not understandable)
- Regressive behavior
- Flat affect
- Delusions
- Hallucinations
- Inappropriate laughter
- Repetitive mannerisms

- Social withdrawal

Undifferentiated type: Patient may have symptoms of more than one subtype of schizophrenia.

Residual type: Prominent symptoms of the illness have abated, but some features - such as hallucinations and flat affect - may remain.

Signs and tests

Because other diseases can also cause symptoms of psychosis, psychiatrists should make the final diagnosis. The diagnosis is made based on a thorough psychiatric interview of the person and family members. As yet, there are no defining medical tests for schizophrenia. The following factors may suggest a schizophrenia diagnosis, but do not confirm it:

- Developmental background
- Genetic and family history
- Changes from level of functioning prior to illness
- Course of illness and duration of symptoms
- Response to pharmacological therapy

CT scans of the head and other imaging techniques may identify some changes associated with schizophrenia in the research literature and may rule out other neurophysiological disorders.

Treatment

Acute episode of schizophrenia :
- hospitalization is often required to promote safety, and to provide for the person's basic needs such as food, rest, and hygiene.

R / Neurazine amp. ١-٢ أمبول
بالعضل كل ٤ ساعات حتى يهدأ المريض ثم يكمل بالأقراص

R / Neurazine tab. ٢قرص كل ٤ ساعات
حتى تضبط الأعراض ثم تخفض تدريجيا

- E.C.T in catatonic & hebephrenic types up to 6 ECTs (modified) daily or every other day .

بعض الأعراض تحتاج للمعالجة بالتشنج الهربائى (يوميا أو يوم بعد يوم (لعدد٦ جلسات

- On discharge from the hospital , patient should be prescriped :

R / Melleril retard 200 mg tab.
قرص كل مساء
R / Safinace 5 mg tab.
Or : Stelazine 5 mg tab.
قرص ٣ مرات يوميا
R / Cogentin 2 mg tab.
Or : Akineton 2 mg tab.
Or : Parkinol 2 mg tab.
قرص ٢-٣ مرات يوميا

- Supportive psychotherapy :

Chronic episode
- Maintenance treatment to prevent relapses :
R / Modecate 25 mg vial.
Or : Fluanxol –depot amp.
Or : Haldol –decanoate 50 mg amp.
حقنة بالعضل كل ٢-٤ أسابيع

R / Melleril retard 200 mg tab.
Or : Neurazine tab. قرص كل مساء

- **Antiparkinsonian drugs** used to avoid extrapyramidal symptoms (muscle contractions, problems of movement and gait, and feelings of restlessness) that result from using traditional antipsychotics :

R / Cogentin 2 mg tab.
Or : Akineton 2 mg tab.
قرص مرتين يوميا

- علاج نفسى و سلوكى مع إشراك الأسرة فى علاج المريض

Depression

Definition

Depression may be described as feeling sad, blue, unhappy, miserable, or down in the dumps. Most of us feel this way at one time or another for short periods. But true clinical depression is a mood disorder in which feelings of sadness, loss, anger, or frustration interfere with everyday life for an extended time.

Signs and Symptoms

1- Persistent sadness
2- Irritability
3- Feelings of anxiety
4- Loss of interest or pleasure in life
5- Neglect of personal responsibility or personal care
6- Changes in eating habits
7- Changes in sleeping patterns
8- Fatigue and loss of energy
9- Extreme mood changes
10- Feeling helpless, hopeless, or worthless
11- Physical symptoms (e.g., headaches, chronic pain)
12- Increased alcohol or drug use
13- Thoughts of death or suicide

The main types of depression include:

1- Major depression five or more symptoms listed above must be present for at least 2 weeks, but major depression tends to continue for at least 6 months. (Depression is classified as minor depression if *less* than five depressive symptoms are present for at least 2 weeks.)
2- Dysthymia -- a chronic, generally milder form of depression but lasts longer -- usually as long as two years.
3- Atypical depression -- depression accompanied by unusual symptoms, such as hallucinations (for example, hearing voices that are not really there) or delusions (irrational thoughts).

Other common forms of depression include:

1- Postpartum depression -- many women feel somewhat down after having a baby.

2- Premenstrual dysphoric disorder (PMDD) -- depressive symptoms occur one week prior to menstruation.
3- Seasonal affective disorder (SAD) -- occurs during the fall-winter season and disappears during the spring-summer season. Likely to be due to lack of sunlight.

Depression may also occur with mania (known as manic-depression or bipolar disorder). In this condition, moods cycle between mania and depression.

Depression is more common in women than men and is especially common during the teen years.

Causes of Depression

1- Changes in brain chemistry are thought to be involved.
2- Family history and genetic inheritance have been linked to depression.
3- Stressful events in life, such as a serious loss, difficult relationship, job change or financial problem, can trigger an episode of depression.
4- Medical illness can affect emotions and cause depression.
5- Medications, including drugs used for heart conditions, cancer, hormone regulation and high blood pressure, are linked to episodes of depression.
6- Drugs or alcohol or abuse of prescription medication can affect depression.

Treatment Options for Depression

Types of drugs (antidepressants) used to treat depression

1- Selective Serotonin Reuptake Inhibitors (SSRIs) increase the availability of the neurotransmitter serotonin in the brain.
2- Tricyclic antidepressants (TCAs) increase neurotransmitter serotonin and norepinephrine in the brain.
3- Heterocyclics act like tricyclic antidepressants in the brain, but were developed to offer fewer side effects.
4- Monoamine oxidase inhibitors (MAOIs) prevent the breakdown of serotonin and norepinephrine in the brain, increasing their availability as nerve receptor sites. These medications are not often used because of their potential side effects.

Psychotherapy is available in several forms, including individual, group and family therapy. Therapists talk with patients to help identify unhealthy thought and behavioral patterns to address and modify.

Light therapy involves increased exposure to natural or artificial light. This treatment is normally used for patients who suffer from Seasonal Affective Disorder (SAD).

Electroconvulsive therapy (ECT) is a safe and effective treatment for severe and prolonged depression. In ECT, a patient is anesthetized and an electrical current is passed through the patient's brain to cause a seizure. ECT is given as a series of treatments, usually six to 10, and can be remarkably effective in treating depression that does not respond to medications.

Insomnia

R / Donormyl (Doxylamine) 15 mg tab. نصف – قرص كامل قبل النوم بـ١٥ دقيقية
Or : Atrax tab. قرص ١-٢ مرة يوميا
Or : Dormival cap. ٢-٣ كبسولة جرعة واحدة قبل النوم

- يجب تنظيم ميعاد محدد للنوم كل يوم
- التقليل من تناول المشروبات المنبهة مثل القهوة والشاى و النسكافيه
- تناول المشروبات التى تساعد على الإسترخاء والنوم مثل اللبن .
- أخذ حمام دافىء قبل النوم يساعد على الإسترخاء

Chapter-9
Respiratory Diseases

Pneumonia

Alternative names
Pneumonitis; Bronchopneumonia; Community-acquired pneumonia

Definition
Pneumonia is an inflammation of the lungs caused by an infection. Many different organisms can cause it, including bacteria, viruses, and fungi.

Pneumonia can range from mild to severe, even fatal. The severity depends on the type of organism causing pneumonia, as well as age and underlying health.

Causes, incidence, and risk factors
Bacterial pneumonias tend to be the most serious and, in adults, the most common cause of pneumonia. The most common pneumonia-causing bacterium in adults is *Streptococcus pneumoniae* (pneumococcus).

Respiratory viruses are the most common causes of pneumonia in young children, peaking between the ages of 2 and 3. By school age, the bacterium *Mycoplasma pneumoniae* becomes more common.

In some people, particularly the elderly and those who are debilitated, bacterial pneumonia may follow influenza or even a common cold.

Many people contract pneumonia while staying in a hospital for other conditions. This tends to be more serious because the patient's immune system is often impaired due to the condition that initially required treatment. In addition, there is a greater possibility of infection with bacteria that are resistant to antibiotics.

Symptoms
The main symptoms of pneumonia are:

- Cough with greenish or yellow mucus; bloody sputum happens on occasion
- Fever with shaking chills
- Sharp or stabbing chest pain worsened by deep breathing or coughing
- Rapid, shallow breathing
- Shortness of breath

Additional symptoms include:

- Headache
- Excessive sweating and clammy skin
- Loss of appetite
- Excessive fatigue
- Confusion in older people

Signs and tests

In pneumonia, breathing is hard & fast. Crackles صوت خشخشة are heard when listening to chest with a stethoscope. Other abnormal breathing sounds may also be heard through the stethoscope or via percussion (tapping النقر on chest wall).

The following tests may show signs of pneumonia:

- Chest x-ray
- Gram's stain and culture of sputum to look for the organism causing symptoms
- CBC to check white blood cell count; if high, this suggests bacterial infection
- Arterial blood gases to check how well blood is oxygenated
- CAT scan of the chest
- Pleural fluid culture if there is fluid in the space surrounding the lungs

Treatment

If the cause is bacterial, the goal is to cure the infection with antibiotics. If the cause is viral, antibiotics will NOT be effective. In some cases it is difficult to distinguish between viral and bacterial pneumonia, so antibiotics may be prescribed.

Many people can be treated at home with antibiotics. If the underlying disease is chronic, severe symptoms, or low oxygen levels, hospitalization may be required for intravenous antibiotics and oxygen therapy. Infants and the elderly are more commonly admitted for treatment of pneumonia.

Home therapy :

- Drink plenty of fluids to help loosen secretions and bring up phlegm البلغم.
- Get lots of rest.
- Control fever with aspirin or acetaminophen. DO NOT give aspirin to children.

R / Unasyn 375 , 750 , 1500 Vial .
٥٠ - ١٠٠ مجم لكل كجم من وزن الجسم بالعضل أو الوريد يوميا .

OR / Rociphen 0.5 Or 1 gm.
٨٠ مجم لكل كجم من وزن الجسم بالوريد أو بالعضل يوميا .

OR / Garamycin (gentamicin) 20 , 40 , 80 mg Amp.
٥-٧ مجم لكل كجم من وزن الجسم يوميا مقسمة على جرعتين بالعضل أو الوريد .

OR / Cefotax 0.5 or 1 gm . vial .
٥٠ – ١٠٠ مجم لكل كجم بالعضل أو بالوريد مقسمة على جرعتين يوميا .

R / Avipect syrup.
or : Bronchophan Syrup.
ملعقة ٣ مرات يوميا

R / Brufen tab. & Syrup.
قرص أو ملعقة ٣ مرات يوميا

R / Vegaskine Ped. Supp. (For children) لبوسة كل ١٢ ساعة

In the hospitalization , respiratory treatments to remove secretions may be necessary. Occasionally, steroid medications may be used to reduce wheezing if there is an underlying lung disease.

Prevention

- Washing hands frequently, especially after blowing nose, going to the bathroom, diapering, and before eating or preparing foods.
- stoping smoke. Tobacco damages lung's ability to ward off infection.
- Wearing a mask when cleaning dusty or moldy areas

Vaccines can help prevent pneumonia in children, the elderly, and people with diabetes, asthma, emphysema, HIV, cancer, or other chronic conditions:

- Pneumococcal vaccine prevents *Streptococcus pneumoniae.*
- Flu vaccine prevents pneumonia and other infections caused by influenza viruses. It must be given yearly to protect against new viral strains.
- Hib vaccine prevents pneumonia in children from *Haemophilus influenzae* type b.

Taking deep breaths may help prevent pneumonia if patient is in the hospital -- for example, while recovering from surgery. Often, a breathing device will be given to patient to assist in deep breathing.

Pneumothorax

Alternative names Air around the lung; Air outside the lung

Definition A pneumothorax is collection of air or gas in the space surrounding the lungs.

Causes, incidence, and risk factors

Pneumothorax may result from chest trauma, excessive pressure on the lungs, or an underlying lung disease such as COPD, asthma, cystic fibrosis, tuberculosis, and whooping cough. In some cases, the cause is unclear.

Symptoms

- Sudden sharp chest pain, made worse by a deep breath or a cough
- Shortness of breath
- Chest tightness
- Easy fatigue
- Rapid heart rate
- Bluish color of the skin caused by lack of oxygen

Note: Symptoms may begin during rest or sleep.

Additional symptoms that may be associated with this disease:

- Nasal flaring
- Anxiety, stress, and tension
- Hypotension (low blood pressure)

Signs and tests

Stethoscope examination of the chest reveals decreased or absent breath sounds on the affected side.

Tests include:

- Chest x-ray to determine presence of air outside the lung
- Arterial blood gases

Treatment

Small pneumothoraces may go away on their own.

Larger pneumothoraces require the removal of air from around the lung. A chest tube (chest tube insertion) placed between the ribs into space surrounding the lungs helps clear the air and allows the lung to re-expand. This may take several days (the chest tube is left in place). The patient must stay in the hospital while the chest tube is in place.

Supplemental oxygen may be needed to help air around the lung be reabsorbed more quickly.

Surgery may be needed to prevent recurrent episodes.

Prevention There is no known prevention, other than to decrease risk by stopping smoking.

Bronchitis

Signs and symptoms

- Cough with yellowish-gray or green mucus (sputum) .
- Mucus that isn't white or clear usually means there's a secondary infection.
- Soreness and a feeling of constriction or burning in chest
- Sore throat
- Congestion
- Breathlessness
- Wheezing
- Slight fever and chills
- Overall malaise

Causes

- viruses that cause colds often cause acute bronchitis.
- pollutants such as household cleaners and smog.
- Smoking .

- Bronchitis can also occur when acids from stomach consistently back up into esophagus, a condition known as gastroesophageal reflux disease, or GERD.

- Exposure to certain irritants on the job may develop occupational bronchitis which may be dry (nonproductive).

Acute bronchitis : Occurs in short time & cough longed for few days only .

Chronic bronchitis : - inflammation and thickening of the lining of bronchial tubes become permanent , shortness of breath , continual cough for at least three months a year, large amounts of mucus

In some people, chronic inflammation of the airways leads to asthma.

Screening and Diagnosis

- Listening of chest with a stethoscope.

- Chest X-ray

- Sputum culture : a test that checks for the presence of bacteria in sputum .

- Pulmonary function test (PFT) : that checks for signs of asthma or emphysema. by a device called a spirometer, which measures the volume of air in lungs after taken a deep breath and blown it out.

Complications

- Pneumonia , Bronchial asthma .
- Older adults, infants, smokers and people with chronic respiratory disorders or heart problems are at greatest risk of this complication.

Treatment

Acute bronchitis :

For cough :

R / Sinecod syrup.

Or : Tussilar Syrup. (in dry cough)

ملعقة ٣ مرات يومياً

R / Ultrasolv Syrup. (in productive cough) ملعقة ٣ مرات يوميا

For pain & fever :

R / Abimol Syrup. (for children)

Or : Paramol 500 mg. Tab. (for adult) .

ملعقة أو قرص ٣ مرات يوميا

For Breathlessness & wheezing :

R / Aironyl Syrup. ملعقة ٣ مرات يوميا

For secondary infection :

R / Bacticlor 500 mg Cap.(in adult) 250 mg Syrup. (in children) . قرص أو ملعقة كل ١٢ ساعة لمدة ٥ ـ ١٠ أيام

Chronic bronchitis :

R / Flumox 500 Cap. , 250 mg Syrup. كبسولة أو ملعقة كل ٨ ساعات

R/ Bronchophan Syrup.

ملعقة ٣ مرات يوميا

R / Minophylline Supp.

لبوسة كل ١٢ ساعة

N.B. some doctors prefer injectable antibiotics for secondary infection .

In severe cases :

Oxygen inhalation , corticosteroid & theophylline injection may be needed .

Prevention

- Avoid smoking and exposure to secondhand smoke.

- Get an annual flu vaccine. Many cases of acute bronchitis result from influenza. Getting a yearly flu vaccine can help protect from both bronchitis and the flu.

Emphysema

Chronic obstructive pulmonary disease (COPD) is a general term for a group of diseases includes chronic bronchitis, asthma and emphysema.

Unlike asthma, which occurs when the muscles in airways tighten, emphysema causes a loss of elasticity in the walls of the small air sacs in lungs. Eventually, the walls stretch and break, creating larger, less efficient air sacs that aren't able to handle the normal exchange of oxygen and carbon dioxide.

Signs and symptoms

- Shortness of breath
- A reduced capacity for physical activity
- Chronic, mild cough with sputum or phlegm.
- Loss of appetite and weight loss.
- Fatigue.

What happens in emphysema ?

In emphysema, inflammation destroys these fragile walls of the air sacs, causing them to lose their elasticity. As a result, the bronchioles collapse, and air becomes trapped in the air sacs, which overstretches them and interferes with the ability to exhale (hyperinflation).

In time, this overstretching may cause several air sacs to rupture, forming one larger air space instead of many small ones. Because the larger, less-elastic sacs aren't able to force air completely out of lungs when patient exhales, he has to breathe harder to take in enough oxygen and to eliminate carbon dioxide.

The process works something like this: Normally, the person exhales in two ways, actively and passively. When he exerts himself and needs more oxygen, his chest muscles contract, forcing air out rapidly. On the other hand, when he sits quietly, his diaphragm contracts and his chest muscles expand to take air in, but his muscles don't actively contract to let the air out. Instead, the elastic tissue around his air sacs contracts, and his lungs passively shrink.

But if he has emphysema, many of these elastic fibers have been destroyed, and he must consciously force air out of his lungs. The forced exhalation compresses many of his small airways, making expelling air even more difficult.

Causes

- Smoking

Cigarette smoke is by far the most common cause of emphysema. The damage begins when tobacco smoke temporarily paralyzes the microscopic hairs (cilia) that line the bronchial tubes. Normally, these hairs sweep irritants and germs out of airways. But when smoke interferes with this sweeping movement, irritants remain in the bronchial tubes and infiltrate the alveoli, inflaming the tissue and eventually breaking down elastic fibers.

Protein deficiency plays a role
In a small percentage of people, emphysema results from low levels of a protein called alpha-1-antitrypsin (AAt), which protects the elastic structures in lungs from the destructive effects of certain enzymes. A lack of AAt can lead to progressive lung damage that eventually results in emphysema.

Screening and **Diagnosis**

- Pulmonary function tests (PFTs).
- Chest X-ray.
- Arterial blood gases (ABG) analysis to measure how well lungs transfer oxygen to bloodstream and how effectively they remove carbon dioxide.
- Pulse oximetry. This test involves use of a small device that attaches to fingertip طرف الإصبع. The oximeter measures the amount of oxygen in blood differently from the way it's measured in blood gas analysis. To help determine whether patient needs supplemental oxygen, the test may be performed at rest, during exercise and overnight.
- Sputum examination. Analysis of cells in sputum can help determine the cause of some lung problems.
- Computerized tomography (CT) scan. A CT scan allows to see organs in two-dimensional images or "slices." Split-second computer processing creates these images as a series of very thin X-ray beams are passed through the body. A CT scan can detect emphysema sooner than an X-ray can, but it can't assess the severity of emphysema as accurately as can a pulmonary function

Treatment : Similar to that outlined under chronic bronchitis .

Bronchial Asthma

Description : Asthma is a chronic disease of the respiratory system in which the airway occasionally constricts, becomes inflamed, and with excessive amounts of mucus, often in response to one or more triggers. E.g. exposure to an environmental stimulant (or allergen), cold air, exercise or exertion, or emotional stress. In children, the most common triggers are viral illnesses such as those that cause the common cold.

✎ This airway narrowing causes symptoms such as wheezing, shortness of breath, chest tightness, and coughing, which respond to bronchodilators. Between episodes, most patients feel fine.

Term Definition: The word asthma is derived from the Greek aazein, meaning "sharp breath."

Signs and symptoms :

An acute exacerbation تفاقم of asthma is referred to as an asthma attack.

➢The clinical hallmarks of an attack are shortness of breath = dyspnea and either wheezing

✍ some victims present primarily with coughing, and in the late stages of an attack, air motion may be so impaired that no wheezing may be heard. When present the cough may sometimes produce clear sputum.

Signs of an asthmatic episode or asthma attack are either wheezing, rapid breathing (tachypnea), prolonged expiration, a rapid heart rate (tachycardia), rhonchous lung sounds (audible through a stethoscope), and over-inflation of the chest.

☞ During very severe attacks, an asthma sufferer المُعاني can turn blue from lack of oxygen, and can experience chest pain or even loss of consciousness.فقدان الوعى Severe asthma attacks may lead to respiratory arrest and death.

Diagnosis

✍ Asthma is strongly suspected if a patient suffers from eczema or other allergic conditions

✍ Diagnosis in children is based on a careful compilation and analysis of the patient's medical history and subsequent improvement with an inhaled bronchodilator medication.

✍ In adults, diagnosis can be made with a peak flow meter (which tests airway restriction), looking at both the diurnal النهارىvariation and any reversibility following inhaled bronchodilator medication.

✍ Testing peak flow at rest (or baseline) and after exercise can be helpful, especially in young asthmatics that may experience only exercise-induced asthma.

Differential **Diagnosis**

1- Before diagnosing someone as asthmatic, alternative possibilities should be considered. A physician taking a history should check whether the patient is using any known bronchoconstrictors (that cause narrowing of the airways, e.g., certain anti-inflammatory agents or beta-blockers).

2- Chronic obstructive pulmonary disease, which closely resembles asthma, is correlated with more exposure to cigarette smoke, an older patient, less symptom reversibility after bronchodilator administration (as measured by spirometry)

✍ Asthma is categories:

A- Mild intermittent

B- mild persistent

C- moderate persistent

D- severe persistent.

The diagnosis of "severe persistent asthma" occurs when symptoms are continual with frequent exacerbations تتفاقم بشدة and frequent nighttime symptoms, result in limited physical activity and when lung function as measured by PEV or FEV1 tests is less than 60% predicted with PEF .

3- There is no cure for asthma. Doctors have only found ways to prevent attacks and relieve the symptoms such as tightness of the chest and trouble breathing.

➢ The airways of asthmatics are "hypersensitive" to certain triggers, also known as stimuli.

There are several types of stimuli:

1- allergenic air pollution, from nature which include waste from common

household insects, such as the house dust mite and cockroach, grass pollen, mould spores and pet epithelial cells.

2- Medications, including aspirin and beta blockers

3- various industrial compounds and other chemicals, notably sulfites; chlorinated swimming pools ...etc

4- Early childhood infections, especially viral respiratory infections. However, persons of any age can have asthma triggered by colds and other respiratory infections even though their normal stimuli might be from another category (e.g. pollen) and absent at the time of infection.

Did you know that > 80% of asthma attacks in adults and 60% in children are caused by respiratory viruses.

exercise, the effects of which differ somewhat from those of the

☞☞ Many studies have linked asthma, bronchitis, acute respiratory illnesses to air quality experienced by children.

5- allergenic indoor air pollution from newsprint & other literature

Bronchial inflammation

The mechanisms behind allergic asthma is inhaled allergens that find their way to the inner airways are ingested by a type of cell known as antigen presenting cells, or APCs.➢ In most people, the immune cells (TH0 cells) "check" and usually ignore the allergen molecules. In asthmatics, these cells transform into a different type of cell (TH2), for reasons that are not well understood. The resultant TH2 cells activate an important arm of the immune system, known as the humoral immune system. The humoral immune system produces antibodies against the inhaled allergen. Later, when an asthmatic inhales the same allergen, these antibodies "recognize" it and activate a humoral response. Inflammation results: chemicals e.g. (histamine & Leukotriens) are produced that cause the airways to constrict and release more mucus, and the cell-mediated arm of the immune system is activated.

Treatment :

1- The most effective treatment for asthma is identifying triggers معرفة الانتجين المسبب للحساسية , such as pets الحيوانات الأليفة or aspirin, and limiting or eliminating exposure to them.

2- Desensitization to allergens has been shown to be a treatment option for certain patients. حقنة مخففه من الانتجين المسبب للحساسية تحضر خصيصا لكل مريض تمنع تحسسه من الانتيجين

3- Smoking cessation توقف and avoidance of second-hand smoke التدخين السلبى is strongly encouraged in asthmatics.

4- Bronchodilators are recommended for short-term relief in all patients.

5- For those with mild persistent disease (more than two attacks a week), low-dose inhaled glucocorticoids or alternatively, an oral leukotriene modifier, a mast-cell stabilizer, or theophylline may be administered.

6- For those who suffer daily attacks, a higher dose of glucocorticoid in conjunction with a long-acting inhaled β-2 agonist may be prescribed ➢➢alternatively; a leukotriene modifier or theophylline may substitute for the β-2 agonist. In severe asthmatics, oral glucocorticoids may be added to

these treatments during severe attacks.

7- Symptomatic control of episodes of wheezing and shortness of breath is generally achieved with fast-acting bronchodilators.

➢➢ Short-acting, selective beta2-adrenoceptor agonists, such as salbutamol ,terbutaline .

➢➢ Older, less selective adrenergic agonists, such as inhaled epinephrine and ephedrine tablets, are available

➢➢ ipratropium bromide may be used instead. They have no cardiac side effects and thus can be used in patients with heart disease {e.g. atrovent & combivent}

Did you know that > Nebulizers may be helpful to some patients experiencing a severe attack. Such patients may not be able to inhale deeply.

Prevention medication

such as an inhaled corticosteroid, which helps to suppress inflammation and reduces the swelling of the lining of the airways, in anyone who has frequent (greater than twice a week)

Preventive agents {to guard against future attack include :

1- Inhaled glucocorticoids (have low side effects) e.g. beclomethasone , budesonide, fluticasone, mometasone, and triamcinolone).

2- Leukotriene modifiers (montelukast, zafirlukast)

3- Antimuscarinics/anticholinergics (ipratropium)

4- Methylxanthines (theophylline and aminophylline), which are sometimes considered if sufficient control cannot be achieved with inhaled glucocorticoids and long-acting β-agonists alone.

5- Antihistamines, often used to treat allergic symptoms

6- Long-acting β2-agonists e.g. Serevent (salmeterol), a long-acting bronchodilator.

➢➢ long-acting beta2-adrenoceptor agonists include salmeterol, formoterol {Foradil & Oxis}, bambuterol {Bambic}

➢➢ Combinations of inhaled steroids and long-acting bronchodilators e.g. Seretide

Emergency treatment

➢➢ oxygen to alleviate the hypoxia

➢➢ nebulized salbutamol or terbutaline (short-acting beta-2-agonists)

➢➢ methylprednisolone, dexamethasone, or hydrocortisone) other bronchodilators that are occasionally effective when the usual drugs fail:

➢➢ nonspecific beta-agonists, injected or inhaled e.g. epinephrine

➢➢ theophylline, aminophylline

➢➢ inhalation anesthetics that have a bronchodilatory effect isoflurane, halothane, enflurane);

Prognosis

The prognosis for asthmatics is good, especially for children with mild disease. For asthmatics diagnosed during childhood, 54% will no longer carry the diagnosis after a decade.

➢➢ For those who continue to suffer from mild symptoms, corticosteroids can help most to live their lives with few disabilities.

Pulmonary Tuberculosis
السـل أو الدرن الرئوى

What is tuberculosis?

Tuberculosis also called TB, is an infection caused by a bacteria (a germ). Tuberculosis usually affects the lungs, but it can spread to the kidneys, bones, spine, brain and other parts of the body.

How does doctor check for tuberculosis?

The most commonly used method to check for tuberculosis is the PPD skin test. If patient has a positive PPD, it means he has been exposed to a person who has tuberculosis and he is now infected with the bacteria that causes the disease.

After he has a positive PPD skin test, he must has a chest x-ray and a physical exam to find it whether has active disease or are contagious (able to spread the disease).

It usually takes only a few days to tell whether he is contagious. Most people with a positive skin test aren't contagious.

If I have a positive PPD test, do I have tuberculosis?

Not necessarily. A person can be infected with the bacteria that causes tuberculosis but not actually have tuberculosis disease. Many people are infected with the bacteria that causes tuberculosis, but only a few of these people (about 10%) go on to develop the disease. People who do have the disease are said to have "active" tuberculosis.

Healthy people who get infected with the tuberculosis bacteria are able to fight off the infection and do not get tuberculosis disease. The bacteria is dormant (inactive) in their lungs. If the body is not able to fight off the infection and the bacteria continues to grow, active tuberculosis develops.

Symptoms :

- Cough . - Lose weight
- fever or break out in a sweat during the night (called "night sweats").
- Difficult breathing

Treatment :

If patient has active TB, 4 medicines may be taken :

- Isoniazid
- Rifampin (one brand name: Rifadin)
- Ethambutol (brand name: Myambutol)
- Pyrazinamide

Chapetr -10 Rheumatology

Arthritis

☞ is a group of conditions where there is damage caused to the joints of the body.

Types of arthritis: There are many forms of arthritis, each of which has a different cause.

1- Osteoarthritis also known as degenerative arthritis or degenerative joint disease .

2- Rheumatoid arthritis and psoriatic arthritis are autoimmune diseases in which the body is attacking itself.

3- Gouty arthritis is caused by deposition of uric acid crystals in the joint that results in subsequent inflammation.

Osteoarthritis = OA

Osteoarthritis also known as degenerative arthritis or degenerative joint disease, and sometimes referred to as "arthrosis" or "osteoarthrosis" or in more colloquial terms "wear and tear"), is a condition in which low-grade inflammation results in pain in the joints, caused by wearing of the cartilage that covers and acts as a cushion inside joints. As the bone surfaces become less well protected by cartilage, the patient experiences pain upon weight bearing, including walking and standing. Due to decreased movement because of the pain, regional muscles may atrophy, and ligaments may become more lax. OA is the most common form of arthritis.

Signs and symptoms

The main symptom is chronic pain, causing loss of mobility and often stiffness. "Pain" is generally described as a sharp ache, or a burning sensation in the associated muscles and tendons. OA can cause a crackling noise (called "crepitus") when the affected joint is moved or touched, and patients may experience muscle spasm and contractions in the tendons. Occasionally, the joints may also be filled with fluid.

- OA commonly affects the hand, feet, spine, and the large weight-bearing joints, such as the hips and knees, although in theory, any joint in the body can be affected. As OA progresses, the affected joints appear larger, are stiff and painful, and usually feel worse, the more they are used throughout the day, thus distinguishing it from rheumatoid arthritis.

Causes of osteoarthritis

Osteoarthritis often affects multiple members of the same family, suggesting that there is hereditary susceptiblity to this condition. Osteoarthritis may be divided into two types:

Primary osteoarthritis

This type of OA is a chronic degenerative disorder related to but

not caused by aging, as there are people well into their nineties who have no clinical or functional signs of the disease. As a person ages, the water content of the cartilage decreases due to a reduced proteoglycan content, thus causing the cartilage to be less resilient مرونة. Without the protective effects of the proteoglycans, the collagen fibers of the cartilage can become susceptible to degradation and thus exacerbate the degeneration. Inflammation of the surrounding joint capsule can also occur, though often mild (compared to that which occurs in rheumatoid arthritis). This can happen as breakdown products from the cartilage are released into the synovial space, and the cells lining the joint attempt to remove them.

Secondary osteoarthritis

This type of OA is caused by other factors or diseases but the resulting pathology is the same as for primary OA .

Diagnosis

Diagnosis is normally done through x-rays. This is possible because loss of cartilage, subchondral ("below cartilage") sclerosis, subchondral cysts, the narrowing of the joint space between adjacent bones, and bone spur formation (osteophytes) show up clearly in x-rays. Plain films.

Treatment :

R / Indomethacin Supp.
لبوسة عند اللزوم
Or : Celebrex 200 Cap.
كبسولة كل ١٢ ساعة
Or : Indocid Cap.
١-٢ كبسولة بعد الأكل ٣ مرات يوميا
R/ Voltaren oint . دهان ٣ مرات يوميا

R / Piascledine 300 mg . Cap.
كبسولة واحدة يوميا لمدة ٣-٦ شهور
Or : Glucosamine tab.
كبسولة ٣ مرات يوميا لمدة ٣ – ٦ شهور

- Reduce weight in obese patients .

Notes :

- Dietary Supplements useful for treating OA include:
Antioxidants, including vitamins C .
- Chondroitin sulphate improves symptoms of OA, and delays its progression.
- Glucosamine: is used by the body to make some of the components of cartilage and synovial fluid. Supplemental glucosamine may improve symptoms of OA and delay its progression e.g.

- Methylsulfonylmethane (MSM) : significantly reduced pain and improved physical functioning in OA patients without major adverse events
- vitamins B9 (folate) and B12 (cobalamin) taken in large doses significantly reduced OA hand pain, presumbably by reducing systemic inflammation .
- Vitamin D deficiency has been reported in patients with OA, and supplementation with Vitamin D3 is recommended for pain relief
- NSAIDs are usually prescribed which can reduce both the pain and inflammation quite effectively. These include ((diclofenac, ibuprofen and naproxen. High doses are often required.))
- Another type of NSAID, COX-2 selective inhibitors (e.g. celecoxib) reduce this risk substantially. These latter NSAIDs carry an elevated risk

for cardiovascular disease . , and some have now been withdrawn from the market. Another medication.

- Application of heat — often moist heat — eases inflammation and swelling in the joints, and can help improve circulation, which has a healing effect on the local area.

-Topical treatments : Some NSAIDs are available for topical use (e.g. ibuprofen and diclofenac) and may improve symptoms without having systemic side-effects.

- Severe pain in specific joints can be treated with local lidocaine injections or similar local anaesthetics, and glucocorticoids (such as hydrocortisone). Corticosteroids (cortisone and similar agents) may temporarily reduce the pain.

- If the above management is ineffective, joint replacement surgery may be required. Individuals with very painful OA joints may require surgery such as fragment removal, repositioning bones, or fusing bone to increase stability and reduce pain. For severe pain, narcotic pain relievers such as tramadol, and eventually opioids (hydrocodine, or morphine) may be necessary; these should be reserved for very severe cases, and are rarely medically necessary for chronic pain.

Rheumatoid arthritis = RA

The name is derived from the Greek rheumatos meaning "flowing", the suffix -oid meaning "in the shape of", arthr meaning "joint" and the suffix -itis, a "condition involving inflammation".

Rheumatoid arthritis (RA) is traditionally considered a chronic, inflammatory autoimmune disorder that causes the immune system to attack the joints. It is a painful inflammatory condition, which can lead to substantial loss of mobility عدم المقدرة على الحركة due to pain and joint destruction.

Symptomes :

1- The symptoms that distinguish rheumatoid arthritis from other forms of arthritis are inflammation and soft-tissue swelling of many joints at the same time = (polyarthritis).

2- The joints are usually affected initially asymmetrically بدون تساوى and then in a symmetrical fashion as the disease progresses.

3- there is stiffness of all joints in the morning that lasts over 1 hour.

4- Thus, the pain of rheumatoid arthritis is usually worse in the morning compared to the classic pain of osteoarthritis where the pain worsens over the day as the joints are used.

5- As the pathology progresses the inflammatory activity leads to erosion تآكل and destruction of the joint surface, which impairs their range of movement and leads to deformity. The fingers are typically deviated towards the little finger , and can assume unnatural shapes.

6- Cutaneous manifestations is most characteristic of rheumatoid arthritis is the rheumatoid nodule. The initial pathologic process in nodule formation is unknown but is thought to be related to small-vessel inflammation.

Extra-articular (elsewhere)

7- Dermatological Subcutaneous nodules on extensor العضلة الباسطة surfaces, such as the elbows, are often present.

8- Pulmonary Fibrosis may occur spontaneously or as a consequence of therapy (for example methotrexate).

9- Autoimmune disorders, resulting in nail fold infarcts, neuropathies and nephropathies.

10- Cardiovascular Pericarditis, endoscarditis, left ventricular failure, valvulitis and fibrosis.

Ocular

Diagnosis :

1- Morning stiffness of >1 hour.
Arthritis and soft-tissue swelling of >3 of 14 joints/joint groups
Arthritis of hand joints

2- Symmetric arthritis

3- Subcutaneous nodules in specific places

4- Rheumatoid factor at a level above the 95th percentile

5- Radiological changes suggestive of joint erosion

☞ At least four criteria have to be met to establish the diagnosis, although many patients are treated despite not meeting the criteria.

6- Blood tests

rheumatoid factor = RF= a specific antibody),

☞ A negative RF does not rule out لا يمنع وجود RA

During the first year of illness, rheumatoid factor is frequently negative = seronegative

☞ 80% of patients convert to seropositive status.

N.B. RF is also seen in approximately 10% of the healthy population, therefore the test is not very specific.

7- a new serological test has been developed in recent years, which tests for the presence of so called anti-citrullinated protein (ACP) antibodies. Like RF, this test can detect approximately 80% of all RA patients ☞ ACP antibodies can be detected in early stages of the disease, Currently, most common test for ACP antibodies is the anti-CCP (cyclic citrulinated peptide) test.

8- several other blood tests are done to allow for other causes of arthritis, such as lupus erythematosus داء الزئبة. The erythrocyte sedimentation rate (ESR), C-reactive protein,full blood count, renal function, liver enzymes are performed .

Treatment :

- راحة تامة فى السرير

- Nonsteroidal anti-inflammatory drugs (NSAIDs) :

R / Voltaren Amp.
Or : Cataflam Amp.
أمبول بالعضل يوميا

R / Indocid cap.
Or : Brufen Tab.
كبسولة أو قرص بعد الأكل ٣ مرات يوميا

- Disease modifying anti-rheumatic drugs (DMARDs) :

R / Artamine 250 mg Cap. (D-penicillamine)
كبسولة يوميا لمدة شهر ثم كبسولة مرتين يوميا لمدة شهر ثم كبسولة ٣ مرات يوميا لمدة شهر ثم كبسولة واحدة يوميا بإستمرار

Or : Myocrisine amp. 50 mg (Gold therapy)
١٠ مجم بالعضل فى البداية ثم ٢٥ مجم بالعضل بعد أسبوع ثم ٥٠ مجم بالعضل أسبوعيا حتى يكمل ١ جم ثم ٢٠ مجم بالعضل كل شهر

- Corticosteroids :

R / Synacthen-depot Amp .

حقنة بالعضل يوميا أو يوم بعد يوم حتى تتحسن الحالة

Or : Hostacortin Tab.

قرص مرتين يوميا

Notes : Treatment divided into :-

1- disease-modifying antirheumatic drugs (DMARDs Look types below).
2- anti-inflammatory agents and analgesics improve pain and stiffness but do not prevent joint damage or slow the disease progression..

☞ DMARDs have been found to produce durable remissions and delay disease progression. In particular they prevent bone and joint damage from occurring secondary to the uncontrolled inflammation. This is important as damage is usually irreversible.

☞ permanent damage to the joints occurs at a very early stage in the disease.

☞ Ultrasound and MRI are more sensitive methods of imaging the joints and have demonstrated that joint damage occurs much earlier and in more patients than was previously thought اكثر مما كان يعتقد سابقا . Patients will often have erosions detectable by ultrasound .

☞ Starting DMARDs early is beneficial as well as prevention of structural joint damage.

☞ Delaying therapy for as little as a few months after the onset of symptoms can result in worse outcomes in the long term.

Disease modifying anti-rheumatic drugs (DMARDs)

The most important DMARDs are xenobiotic agents .

Xenobiotics : include: azathioprine cyclosporine A,
D-penicillamine ,
hydroxychloroquine ,leflunomide,
methotrexate
sulfasalazine (SSZ)

☞ common adverse effects of xenobiotics are liver and bone marrow toxicity

☞ Hydroxychloroquine (Plaquenil & Hydroquine) may cause ocular toxicity, although this is rare, and because hydroxychloroquine does not affect the bone marrow or liver it is often considered to be the DMARD with the least toxicity. Unfortunately hydroxychloroquine is not very potent, and for most patients hydroxychloroquine alone is insufficient to control symptoms.

☞ Methotrexate is the most important and useful DMARD. This is because it is the most effective not only in controlling the pain and stiffness of arthritis, but also in preventing the bone damage that can result from uncontrolled inflammation.

☞ corticosteroids, effective at reducing pain and stiffness, are less effective at retarding bone damage.

Anti-inflammatory agents and analgesics

A- Anti-inflammatory agents include: glucocorticoids

B- Non-steroidal anti-inflammatory drug (NSAIDs, act as analgesics)

C- Analgesics include:
acetaminophen, opiates , lidocaine topical

Prognosis Some patients have mild short-term symptoms, but in most

the disease is progressive for life.
Around 20%-30% will have subcutaneous nodules (known as rheumatoid nodules); this is associated with a poor prognosis.

☞ Disability Daily living activities are impaired in most patients.
After 5 years of disease, approximately 33% of patients will not be working
After 10 years, approximately half will have substantial functional disability.

Mortality Life expectancy for patients with RA is shortened by 5-10 years, although those who respond to therapy may have lower mortality rates.

Hyperuricemia (Gout)

Gout (also called metabolic arthritis) is a disease due to an inborn disorder of the uric acid metabolism.

✎ monosodium urate crystals are deposited on the articular cartilage of joints and in the particular tissue like tendons. This provokes يثير an inflammatory reaction of these tissues.

✎ Elevated blood levels of uric acid can also result in uric kidney stones .

Pathogenesis

Although the exact cause of gout is not known, it is thought to be linked to defects in purine metabolism. Purine is an organic compound commonly found in the body and is metabolized by the body into uric acid. People with primary gout have either an increased production of uric acid or an impaired excretion of uric acid, or a combination of both.

Signs and symptoms

sudden pain, swelling, redness, warmness and stiffness in the joint.

✎ The patient usually suffers from two sources of pain. The crystals inside the joint cause intense pain .

✎ The inflammation of the tissues around the joint also causes the skin to be swollen, tender and sore if it is even slightly touched. For example, a blanket draping لف البطانية over the affected area could cause extreme pain.

Places of the disease Gout usually attacks the big toe (approximately 75% of first attacks), however it can also affect other joints such as the ankle, heel الكعب, instep مشط القدم, knee, wrist, elbow, fingers, and spine العمود الفقري .

Diagnosis

Hyperuricemia is a common feature; however, urate levels are not always raised. Hyperuricemia is defined as a plasma urate (uric acid) level greater than 420 µmol/L (7.0 mg/dL) in males (the level is around 380 µmol/L in females);

☞ High uric acid level does not necessarily mean a person will develop gout.

✎ lacking in purine-neutralising foods, such as berries, as well as other specific fruit and vegetables

✎ Gout can also develop as co-morbidity of other diseases, including polycythaemia, leukaemia, intake of cytotoxics, obesity, diabetes, hypertension, renal disorders, and hemolytic anemia.

☞ Diuretics (particularly thiazide diuretics) have been blamed for precipitating attacks of gout.

Stages of gout Gout has four distinct stages:

1- asymptomatic ➢ plasma uric acid level increases, but there are no symptoms

2- acute is The first attack of gout marks the second or acute stage

3- intercritical ➢ After the initial attack, the person enters the intercritical stage or symptom-free interval that may last months or even years

4- chronic ➢ gout attacks become frequent and become polyarticular (affecting multiple joints at one time).

Treatment :

- Avoid high-purine foods .

ممنوع تناول اللحوم و الكلى و الكبد و الخميرة و المشروبات الكحولية و البقوليات و السبانخ و الكرنب و عيش الغراب

- Plenty of fluids . شرب السوائل بكثرة

- NSAIDs :

R / Indocid cap.

كبسولة ٣ مرات يوميا بعد الأكل

Or : Dexason tab . قرص مرتين يوميا

- uricosuric :

R / Zyloric 100 mg or 300 mg.

Or : No-uric 100 mg or 300 mg

١٠٠ مجم ٣ مرات يوميا أو ٣٠٠ مجم ٣ مرات يوميا

- R / Urosolvine eff . sachets .

Or : Urivin eff. Sachets

كيس على نصف كوب ماء ٣ مرات يوميا

Or : Colmiditen tab.

قرص ٣ مرات يوميا

Notes :

1- first line treatment should be pain relief. Once the diagnosis has been confirmed, the drugs of choice are indomethacin, other nonsteroidal anti-inflammatory drugs (NSAIDs).

2- Colchicine was previously the drug of choice in acute attacks of gout. It impairs the motility of granulocytes and can prevent the inflammatory phenomena that initiate an attack of gout. Colchicine should be taken within the first 12 hours of the attack and usually relieves the pain within 48 hours.

3- NSAIDs such as ibuprofen can reduce the pain and inflammation slightly

4- Ice may be applied for 20-30 minutes several times a day. There are concerns that uric acid crystallization is accelerated by low

Prevention

Long term treatment (in frequent attacks) is antihyperuricemic therapy.

5 - Because the body metabolizes purines into uric acid, a maintained, low-purine diet can help lower the plasma urate level. Avoiding alcohol, high-purine foods, such as meat, fish, dry beans (also lentils العدس and peas البازلاء), scallops Sardine, prawns الجمبري mushrooms, spinach, and cauliflower القرنابيط can lower plasma urate levels.

6- In addition, consuming purine-neutralizing foods, such as fresh fruits (especially cherries and strawberries) and most fresh vegetables, diluted celery juice الكرفس, distilled water, and B-complex and C vitamins can also help lower plasma urate levels.

7- A strong natural cure is a berry extractالتوت supplement consisting of bilberry, blueberry العناب or cherry الكرز extracts.

✎ The anthocyanins which give the berries their blue and purple hues شكله البنفسجى, after entering the body, turn into powerful anti-inflammatories. These might be an especially preferable option to transplant patients, who frequently suffer gout due to increased toxicity and strain on the kidneys due to their immunosuppressant medication.

8 - Allopurinol, a xanthine oxidase inhibitor, which directly reduces the production of uric acid.

☞ Allopurinol and uricosuric agents are contraindicated in patients with kidney stones and other renal conditions.

✎ fenofibrate (which is used in treating hyperlipidemia) also exerts beneficial uricosuric effect.

Osteoporosis
هشاشة العظام

Definition Osteoporosis : in which the bone mineral density (BMD) is reduced, bone microarchitecture is disruptedتتعرقل , and the amount and variety of non-collagenous proteins in bone is altered. Osteoporotic bones are more susceptible to fracture.

Pathogenesis ✎ osteoporosis is an imbalance between bone resorption and bone formation. Either bone resorption is excessive, and/or bone formation is diminished. Bone matrix is manufactured by the osteoblast cells, whereas bone resorption is accomplished by osteoclast cells.

✎ Due to its hormonal component, more women, particularly after menopause, suffer from osteoporosis than men. In addition it may be caused by various hormonal conditions, smoking and medications (specifically glucocorticoids)

Signs and symptoms

Osteoporotic fractures are those that occur under slight amount of stresses ➤ Typical fractures occur in the vertebral column, hip and wrist.

Risk factors

✎ Prolonged intake of the prescription drug prednisone or any other glucocortioid, tobacco smoking, intake of soft drinks (containing phosphoric acid e.g. Pepsi & CocaCola), low body mass index, estrogen deficiency, early menopause (<45 years) or bilateral oophorectomy, premature ovarian failure, prolonged premenstrual amenorrhea (>1 year), low calcium and vitamin D intake, alcoholism

Diagnosis

➤➤ Dual energy X-ray absorptiometry (DXA) is considered the gold standard for diagnosis of osteoporosis.

Etiology

1- Estrogen deficiency following menopause
2-testosterone deficiency.
3- Glucocorticoid or thyroxine excess states also lead to osteoporosis.

4- Calcium and/or vitamin D deficiency from malnutrition increases the risk of osteoporosis.
5- also smoking cigarettes, low levels of physical activity (weight bearing exercise), and family history.
6- Medication: Steroid-induced osteoporosis (SIOP) due to use of glucocorticoids, Barbiturates (due to accelerated metabolism of vitamin D).

Treatment :

- تناول وجبات تحتوى على الكالسيوم و فيتامين د مثل اللبن و منتجاته .

R / Calcium sandoz eff. Tab.
قرص على نصف كوب ماء مرتين يوميا
Or : Oscal tab . قرص مرة واحدة يوميا

Or : One alpha 0.25 μg & 1 μg cap.
قرص واحد يوميا
R / Miacalcic amp.
أمبول تحت الجلد أو بالعضل يوميا أو يوم بعد يوم

- Anabolics :
R / Deca-durabolin amp.
أمبول بالعضل كل ١٠ – ١٥ يوم

- Androgens for males :
R / Methyl testosterone tab.
١-٢ قرص يوميا

- Estrogens for menopausal ladies :
R / Ethinyl estradiol tab.
قرص واحد يوميا

Notes :

➢➢Patients at risk for osteoporosis (e.g. steroid use) are generally treated with vitamin D and calcium supplements.

➢➢ In osteoporosis (or a very high risk) The most often prescribed bisphosphonates are presently sodium alendronate (e.g. Fosamax) 10 mg a day or 70 mg once a week, risedronate (e.g. Actonel) 5mg a day or 35mg once a week

➢➢ Other medicines prescribed for prevention of osteoporosis include raloxifene (Evista), a selective estrogen receptor modulator (SERM).

➢➢ Increasing vitamin D intake has been shown to reduce fractures up to twenty-five percent in older people according to recent studies.

➢➢ Also bone density benefits from taking the following supplements: calcium and vitamin D, boron, magnesium, zinc, copper, manganese, silicon, folic acid, and vitamins B6, C, and K.

➢➢ Exercise is of great importance for people suffering from the osteoporosis syndrome.

➢➢ Regular load bearing حمل الاثقال exercises can help both to delay the onset of the condition, and to relieve pain; this is because regular movement can help to keep joints supple مرونة الاربطة .

Prognosis

Patients with osteoporosis are at a high risk for additional fractures (the best predictor of fracture is a previous fracture). Treatment for the underlying osteoporosis can reduce the risk of a subsequent fracture considerably.

Systemic Lupus Erythematosus

- Lupus is autoimmune diseases.Lupus can affect many parts of the body, including the joints, skin, kidneys, heart, lungs, blood vessels, and brain.

-More common in women .

- The word “systemic” means the disease can affect many parts of the body.

Causes

In lupus, the body’s immune system does not work as it should. A healthy immune system produces proteins called antibodies and specific cells called lymphocytes that help fight and destroy viruses, bacteria, and other foreign substances that invade the body. In lupus, the immune system produces antibodies against the body’s healthy cells and tissues. These antibodies, called autoantibodies, contribute to the inflammation of various parts of the body and can cause damage to organs and tissues. The most common type of autoantibody that develops in people with lupus is called an antinuclear antibody (ANA) because it reacts with parts of the cell’s nucleus (command center). Doctors and scientists do not yet understand all of the factors that cause inflammation and tissue damage in lupus, and researchers are actively exploring them.

Symptoms of Lupus

Common Symptoms of Lupus

- Painful or swollen joints (arthritis)and muscle pain
- Unexplained fever
- Red rashes, most commonly on the face
- Chest pain upon deep breathing
- Unusual loss of hair
- Pale or purple fingers or toes from cold or stress (Raynaud's phenomenon)
- Sensitivity to the sun
- Swelling (edema) in legs or around eyes
- Mouth ulcers
- Swollen glands
- Extreme fatigue

> Symptoms can range from mild to severe and may come and go over time.

Some people also experience headaches, dizziness, depression, confusion, or seizures. New symptoms may continue to appear years after the initial diagnosis, and different symptoms can occur at different times. In some people with lupus, only one system of the body, such as the skin or joints, is affected. Other people experience symptoms in many parts of their body. Just how seriously a body system is affected varies from person to person. The following systems in the body also can be affected by lupus.

- Kidneys: e.g nephritis
- Lungs: e.g pleuritis, pneumonia.
- Central nervous system: e.g headaches, dizziness, memory disturbances, vision problems, seizures, stroke, or changes in behavior.
- Blood vessels: vasculitis
- Blood: anemia, leukopenia, or thrombocytopenia
- Heart: myocarditis , endocarditis , pericarditis. Lupus can also increase the

risk of atherosclerosis (hardening of the arteries).

Diagnosis

- Medical history
- Complete physical examination

No single test can determine whether a person has lupus, but several laboratory tests may help the doctor to make a diagnosis.

- Laboratory tests:
  - Complete blood count (CBC)
  - increased Erythrocyte sedimentation rate (ESR)
  - Urinalysis
  - Blood chemistries
  - Complement levels
  - Positive Antinuclear antibody test (ANA)
  - Other autoantibody tests (anti-DNA, anti-Sm, anti-RNP, anti-Ro [SSA], anti-La [SSB])
  - Anticardiolipin (or antiphospholipid) antibody test. The presence of this antibody may indicate increased risk for blood clotting and increased risk for miscarriage in pregnant women with lupus.
- Skin biopsy
- Kidney biopsy

It may take months or even years for doctors to piece together the symptoms to accurately diagnose this complex disease. The doctor will look at the entire picture—medical history, symptoms, and test results—to determine if a person has lupus.

Treatment

Treatment plans are tailored to the individual's needs and may change over time.

- NSAIDs : for joint symptoms , such as

R / Brufen tab.
قرص ٣ مرات يوميا بعد الأكل

- Antimalarials: These drugs were originally used to treat malaria, but doctors have found that they also are useful for lupus. A common antimalarial used to treat lupus is hydroxychloroquine (Plaquenil)*. It may be used alone or in combination with other drugs and generally is used to treat fatigue, joint pain, skin rashes, and inflammation of the lungs. Side effects of antimalarials can include stomach upset and, extremely rarely, damage to the retina of the eye.

R / Plaquenil 200mg. tab.
قرص واحد إلى قرصين يوميا

- Corticosteroids: to suppress inflammation.such as
R / Deltasone (prednisone) tab.
Or : Hostacortin tab.
١-٢ مجم / كجم من وزن الجسم حتى تتحسن الحالة ثم تخفض الجرعة تدريجيا

Or : R/ Epidrone (dexamethasone) amp.
Or : Depo-medrol (methylprednisolone) amp.

It is dangerous to stop taking corticosteroids suddenly

- Immunosuppressives: For some patients whose kidneys or central nervous systems are affected by lupus, a type of drug called an immunosuppressive may be used. Immunosuppressives, such as cyclophosphamide (Cytoxan) and mycophenolate mofetil (CellCept), restrain the overactive immune system by blocking the production of immune cells. Side effects may include nausea, vomiting, hair loss, bladder problems, decreased fertility, and increased risk of cancer and infection.

R / **Immuran 50 mg tab.**
or : **Cell cept tab.**
قرص ٢-٣ مرات يوميا

Ankylosing Spondylitis

What Is Ankylosing Spondylitis?

Ankylosing spondylitis (AS) is a rheumatic disease that causes arthritis of the spine and sacroiliac joints and can cause inflammation of the eyes, lungs, and heart valves. It varies from intermittent episodes of back pain that occur throughout life to a severe chronic disease that attacks the spine, peripheral joints and other body organs, resulting in severe joint and back stiffness, loss of motion and deformity as life progresses.

AS is a member of the family of diseases that attack the spine called spondylarthropathies.

Causes

The cause of AS is not known, but all of the spondylarthropathies share a common genetic marker, called HLA-B27, in most affected individuals. In some cases, the disease occurs in these predisposed people after exposure to bowel or urinary tract infections.

Diagnosis

- Laboratory evaluation may reveal an elevated sedimentation rate (an indicator of inflammation), anemia .
- A positive HLA-B27 assay.
- X-rays and bone scans may show characteristic changes.

Treatment

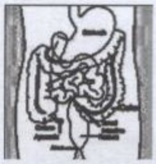
- Physiotherapy .
- Medical drugs :

R / **Indocid cap.**
١-٢ كبسولة بعد الأكل ٣ مرات يوميا
Or : **Indomethacin 100 mg Supp.**
لبوس شرجى قبل النوم يوميا
Or : **feldene 20 mg cap.**
كبسولة مرة واحدة يوميا

Chapter – 11 Surgery

Appendicitis

Appendicitis : is a condition characterized by inflammation of the appendix.



While mild cases may resolve without treatment, most require removal of the inflamed appendix, either by laparotomy or laparoscopy. Untreated, mortality is high, mainly due to peritonitis الإلتهاب البريتونى and shock.

Causes

Location of the appendix in the digestive system

The appendix loses the ability to fight infection and fecal bacteria begin to grow out of control. with the lack of treatment the walls of the appendix eventually become gangrenous from the infection and lack of blood flow. As bacteria begin to leak out through the dying walls, pus forms within and around the appendix (suppuration متقيح). The end result of this is appendiceal rupture causing peritonitis, which may lead to septicemia تسمّم الدمَ and eventually death.

Signs, symptoms and findings

Appendicitis can be classified into two types, typical and atypical. The pain of typical acute appendicitis usually starts centrally (periumbilical) before localising to the right iliac fossa (the lower right side of the abdomen). There is usually associated loss of appetite (anorexia) and fever. Nausea, or vomiting may or may not occur. ☞ Diagnosis is easier in typical acute appendicitis and surgery removes a swollen appendix with little or no suppuration (pus) if operated early (within 24 hours of onset).

Diagnosis

1- based on history and physical examination ☞ an elevation of neutrophilic white cells, & infection markers on blood testing and imaging.

2- The classical history in appendicitis is diffuse pain in the periumbilical region ☞This point is located on the right-hand side of the abdomen one-third of the distance between the anterior superior iliac spine and the navel. Here, on gentle palpation, the abdominal muscles often feel firm to rigid because of involuntary spasm, and a cough also produces a localized soreness.

3- right-side tenderness on a digital rectal exam. Since the appendix normally lies on the right, if a finger is inserted into the rectum and there is tenderness when pressure is applied toward the right, this indicates an increased likelihood احتمالية that the patient has appendicitis.

4- Ultrasonography and Doppler sonography also provide useful

means to detect appendicitis, especially in children.
5- CT scan has become the diagnostic test of choice, especially in adults.

Treatment

appendicitis can be treated by removal of the appendix through a surgical procedure called an appendicectomy
☞ Antibiotics are often given intravenously to help kill remaining bacteria and thus reduce the incidence of infectious complication in the abdomen or wound.

Prognosis

appendicitis patients recover easily with treatment, but complications can occur if treatment is delayed or if peritonitis occurs.
☞ The real possibility of life-threatening peritonitis is the reason why acute appendicitis warrants speedy evaluation and treatment.
☞ Appendectomies have occasionally been performed in emergency conditions (i.e. outside of a proper hospital), when a timely medical evacuation was impossible.

Hemorrhoids
(Piles)

Definition Hemorrhoids are painful, swollen veins in the lower portion of the rectum or anus.

Causes, incidence, and risk factors

This condition is very common, especially during pregnancy and after childbirth. Hemorrhoids result from increased pressure in the veins of the anus. The pressure causes the veins to bulge تبرز and expand, making them painful, particularly when sitting.

The most common cause is straining during bowel movements. Hemorrhoids may result from constipation, sitting for long periods of time, and anal infections. In some cases they may be caused by other diseases, such as liver cirrhosis.

Internal hemorrhoids occur just inside the anus, at the beginning of the rectum. External hemorrhoids occur at the anal opening and may hang outside the anus.

Symptoms

Symptoms of hemorrhoids include:

- Anal itching
- Anal ache or pain, especially while sitting
- Bright red blood on toilet tissue, stool, or in the toilet bowl
- Pain during bowel movements
- One or more hard tender lumps near the anus

Signs and tests

A doctor can often diagnose hemorrhoids simply by examining the rectal area. If necessary, tests that may help diagnose the problem include:

- Stool guaiac (shows the presence of blood)
- Sigmoidoscopy
- Anoscopy

Treatment

- **Sitz baths** can help the patient to feel better. Sit in warm water for 10 to 15 minutes.

- Diet rich fiber

- Over-the-counter **corticosteroid creams** can reduce pain and swelling. Hemorrhoid creams with lidocaine can reduce pain.
R / Proctosedyl cream .
Or : Proctoglyvenol cream .
Or : Anusol Hc cream or supp.
Or : Lignocaine gel.
- دهان لفتحة الشرج من الداخل مرتين يوميا

- **Stool softeners** help reduce straining الحزق and constipation.
R / Minalax tab.
Or : Nasar tab.
قرص عند اللزوم

+ R / Daflon 500 tab.
قرص كل ١٢ ساعة
R / Dioven tab.
Or : Diosed C Cap.
٢ قرص أو كبسولة كل ١٢ ساعة

- **Analgesic :**
R / Bi-profenid tab.
قرص كل ١٢ ساعة

Surgery : - For cases that don't respond to home treatments, a doctor may recommend surgery, like rubber band ligation or surgical hemorrhoidectomy. These procedures are generally used for patients with severe pain or bleeding who have not responded to other therapy.

Expectations (prognosis)

Most Treatments are effective, but to prevent the hemorrhoids from coming back, a high-fiber diet and drinking plenty of fluids may be needed .

Complications

The blood in the enlarged veins may form clots, and the tissue surrounding the hemorrhoids can die. Hemorrhoids with clots generally require surgical removal.

Severe bleeding may also occur. Iron deficiency anemia can result from prolonged loss of blood. Significant bleeding from hemorrhoids is unusual, however.

Prevention

- Avoid straining during bowel movements.
-Avoid constipation. Drink plenty of fluids, at least eight glasses per day.
- Eat a high-fiber diet of fruits, vegetables, whole grains. Consider fiber supplements.

Hemorrhoid surgery (Hemorrhoidectomy)

Definition Hemorrhoid surgery is the removal of enlarged veins around the anus (hemorrhoids).

Description
Hemorrhoids are swollen (enlarged, dilated) veins (varicose veins) inside (internal) or outside (external) the anus that are usually caused by increased pressure, such as straining when constipated or during pregnancy. Hemorrhoids can cause pain, bleeding, clots, and itching.

Hemorrhoids can be removed surgically while the patient is sedated and pain-free (local or spinal anesthesia) or deep asleep and pain-free (general anesthesia). The enlarged vein (hemorrhoid) is removed and a gauze packing is inserted to reduce bleeding.

Smaller hemorrhoids can be banded -- a small rubber band is placed around the base of the hemorrhoid, causing the hemorrhoid tissue to die and fall off from lack of blood flow. Alternatively, such hemorrhoids can be injected with a sclerosing (hardening) agent, which has the same effect. These procedures can often be done as an outpatient or office procedure with minimal or no anesthesia.

Indications
Hemorrhoid removal may be recommended when nonsurgical treatment (fiber-rich diet, laxatives, stool softener, suppositories, medications, warm baths) has not provided adequate relief from:

- Persistent itching
- Anal bleeding
- Pain
- Blood clots (thrombosis of the hemorrhoids)
- Infection

Anal fissure

Definition
An anal fissure is a small split or tear in the anal mucosa that may cause painful bowel movements and bleeding. There may be blood on the outside of the stool or on the toilet tissue following a bowel movement.

Causes, incidence, and risk factors
Anal fissures are extremely common in young infants but may occur at any age. Studies suggest 80% of infants will have had an anal fissure by the end of the first year. Most fissures heal on their own and do not require treatment, aside from good diaper hygiene. However, some fissures may require medical treatment.

The incidence of anal fissures decreases rapidly with age. Fissures are much less common among school-aged children than among infants.

In adults, fissures may be caused by constipation , the passing of large, hard stools, or by prolonged diarrhea. In older adults, anal fissures may be caused by decreased blood flow to the area.

Anal fissures are also common in women after childbirth and people with Crohn's disease.

Symptoms

- Pain while having a bowel movement
- Blood on the surface of stool (not mixed in with stool)
- Blood on toilet tissue or wipes
- A crack in the skin that is visible when the anus is stretched slightly (the fissure is almost always in the midline)
- Constipation, often with painful bowel movements

Signs and tests

- Inspection of the rectum
- Physical exam of the rectal mucosa

Treatment

- Stool softeners
  R / Glycerin supp.
  لبوسة عند اللزوم
- Dietary adjustment (addition of bulk -- substances that absorb water while in the intestinal tract)
- Cleansing more gently
- Petroleum jelly
- Sitz bath
- Anesthetic ointment, if pain interferes with normal bowel movement
  R / H-formula oint.
  Or : Lignocaine oint .
  Or : Neo-haemorrhan oint.
  or : Procto-4 oint .
  دهان لفتحة الشرج مرتين يوميا
- Topical muscle relaxants
  R / Moove massage cream .
  دهان مرتين يوميا

These measures generally heal more than 90% of anal fissures.

For fissures that do not heal with these home treatments, injection of botulinum toxin (Botox) into the anal sphincter may be used to temporarily paralyze the anal sphincter muscle and promote healing. Another option for nonhealing fissures is a minor surgical procedure to relax the sphincter.

Expectations (prognosis)

Anal fissures generally heal quickly without residual problems. However, people who develop fissures are more likely to have them in the future.

Complications

Occasionally, a fissure becomes chronic and will not heal. Chronic fissures may require minor surgery to relax the sphincter.

Prevention

To prevent anal fissures in infants, be sure to change diapers frequently.

To prevent fissures at any age:

- Keep the anal area dry

- Wipe with soft materials or a moistened cloth or cotton pad
- Promptly treat any constipation or diarrhea
- Avoid irritating the rectum

Varicose veins

Alternative names
Varicosity; Varicosis

Definition Varicose veins are enlarged, twisted, painful superficial veins resulting from poorly functioning valves.

Causes, incidence, and risk factors
In normal veins, valves in the vein keep blood moving forward toward the heart. With varicose veins, the valves do not function properly, allowing blood to remain in the vein. Pooling تجمع of blood in a vein causes it to enlarge.

This process usually occurs in the veins of the legs, although it may occur elsewhere. Varicose veins are common, affecting mostly women.

Causes include congenitally defective valves, thrombophlebitis, and pregnancy. Prolonged standing and increased pressure within the abdomen may increase susceptibility to the development of varicose veins or aggravate the condition.

Primary varicose veins occur because of congenitally defective valves, or without a known cause. Secondary varicose veins occur because of another condition, such as occurs when a pregnant woman develops varicose veins.

Symptoms

- Pain in the legs: fullness, heaviness, aching
- Visible, enlarged veins
- Mild swelling of ankles
- Skin at the ankle discolored brown
- Skin ulcers near the ankle

Signs and tests
The Diagnosis is based primarily on the characteristic appearance of the legs when the patient is standing or is seated with the legs dangling. At times a physician may order a duplex ultrasound exam of extremity to see blood flow and characterize the vessels, and to rule out other disorders of the legs. Rarely, an angiography of the legs may be performed to rule out other disorders.

Treatment
- Avoid excess standing, elevate the legs when resting or sleeping, and to wear elastic support hose.

R / Hirudoid oint.
Or : Thrombophob gel .
Or : Reparil gel.
دهان موضعى مرتين يوميا
R / Rutin C tab.
Or : Daflon 500 tab.

قرص كل ١٢ ساعة

Surgery such as vein stripping and ligation (removal of the varicose vein), or sclerotherapy of veins (injecting with a solution that causes scarring, which closes the vein) may be recommended. Vein stripping is a very extensive procedure, and it is usually reserved for patients who are experiencing a lot of pain or who have skin ulcers.

Expectations (prognosis)

Varicose veins tend to worsen over time. Discomfort and progression may be lessened with self care.

Complications

- Phlebitis (chronic inflammation of the vein)
- Formation of leg ulcers
- Rupture of a varicose vein

Prevention Avoid prolonged standing if personal or family history indicates patient is at risk of developing varicose veins.

Fistula

Definition

A fistula is an abnormal connection between an organ, vessel, or intestine and another structure. Fistulas are usually the result of injury or surgery. It can also result from infection or inflammation.

Inflammatory bowel disease, such as ulcerative colitis or Crohn's disease, is an example of a disease that leads to fistulas between one loop of intestine and another. Injury can lead to fistulas between arteries and veins.

Information

Fistulas may occur in many parts of the body. Some of these are:

- Arteriovenous (between an artery and vein)
- Biliary (created during gallbladder surgery, connecting bile ducts to the surface of the skin)
- Cervical (either an abnormal opening into the cervix or in the neck)
- Craniosinus (between the space inside the skull and a nasal sinus)
- Enterovaginal (between the bowel and vagina)
- Fecal or anal (the feces is discharged through an opening other than the anus)
- Gastric (from the stomach to the surface of the skin)
- Metroperitoneal (between the uterus and peritoneal cavity)
- Pulmonary arteriovenous (in a lung, the pulmonary artery and vein are connected, allowing the blood to bypass the oxygenation process in the lung (pulmonary arteriovenous fistula)
- Umbilical (connection between the navel and gut)

Types of fistulas include:

- Blind (open on one end only, but connects to two structures)
- Complete (has both external and internal openings)
- Horseshoe (connecting the anus to the surface of the skin after going around the rectum)
- Incomplete (a tube from the skin that is closed on the inside and does not connect to any internal structure)

Treatment : by surgey

Burns

Definition

There are three levels of burns:

- **First-degree** burns affect only the outer layer of the skin. They cause pain, redness, and swelling.
- **Second-degree** (partial thickness) burns affect both the outer and underlying layer of skin. They cause pain, redness, swelling, and blistering.
- **Third-degree** (full thickness) burns extend into deeper tissues. They cause white or blackened, charred skin that may be numb.

Causes

Burns can be caused by dry heat (like fire), wet heat (such as steam or hot liquids), radiation, friction, heated objects, the sun, electricity, or chemicals.

Symptoms

- Blisters
- Pain (the degree of pain is not related to the severity of the burn -- the most serious burns can be painless)
- Peeling skin
- Red skin
- Shock (watch for pale and clammy skin, weakness, bluish lips and fingernails, and a drop in alertness)
- Swelling
- White or charred skin

Symptoms of an airway burn:

- Charred mouth; burned lips
- Burns on the head, face, or neck
- Wheezing
- Change in voice
- Difficulty breathing; coughing
- Singed nose hairs or eyebrows
- Dark, carbon-stained mucus

First Aid

FOR MINOR BURNS

1. If the skin is unbroken, run cool water over the area of the burn or soak it in a cool water bath (not ice water). Keep the area submerged for at least 5 minutes. A clean,

cold, wet towel will also help reduce pain.

2. Calm and reassure the person.
3. After flushing or soaking, cover the burn with a dry, sterile bandage or clean dressing.
4. Protect the burn from pressure and friction.
5. Over-the-counter ibuprofen or acetaminophen can help relieve pain and swelling. DO NOT give children under 12 aspirin. Once the skin has cooled, moisturizing lotion also can help.

   R / Brufen tab. Or Syrup.

   قرص أو ملعقة ٣ مرات يوميا

   Or : Voltaren gel . (in the fisrt degree only)

   دهان ٣ مرات يوميا
6. Minor burns will usually heal without further treatment. However, if a second-degree burn covers an area more than 2 to 3 inches in diameter, or if it is located on the hands, feet, face, groin, buttocks, or a major joint, treat the burn as a major burn.
7. Make sure the person is up-to-date on tetanus immunization.

FOR MAJOR BURNS

1. If someone is on fire, tell the person to STOP, DROP, and ROLL. Wrap the person in thick material to smother the flames (a wool or cotton coat, rug, or blanket). Douse the person with water.
2. Make sure that the person is no longer in contact with smoldering materials. However, DO NOT remove burnt clothing that is stuck to the skin.
3. Make sure the person is breathing. If breathing has stopped, or if the person's airway is blocked, open the airway. If necessary, begin rescue breathing and CPR.
4. Cover the burn area with a dry sterile bandage (if available) or clean cloth. A sheet will do if the burned area is large. DO NOT apply any ointments. Avoid breaking burn blisters.
5. If fingers or toes have been burned, separate them with dry, sterile, non-adhesive dressings.
6. Elevate the body part that is burned above the level of the heart. Protect the burnt area from pressure and friction.
7. Take steps to prevent shock. Lay the person flat, elevate the feet about 12 inches, and cover him or her with a coat or blanket. However, DO NOT place the person in this shock position if a head, neck, back, or leg injury is suspected or if it makes the person uncomfortable.
8. Continue to monitor the person's vital signs. This means pulse, rate of breathing, and blood pressure.

Treatment : in severe cases :
(Third degree)

- Prevention of shock .
  By oral fluids of I.V. fluids & epinpherine in severe cases.
- Prevention of infection :
  Removing the dead skin then clean with normal saline
  R / Furaseen oint.
  Or / Bivacyn spray .
  دهان او رش للحرق بعد تطهيره بمحلول ملح
  R / Sofra-tulle dressing .
  يوضع شاش غيار مرة واحدة يوميا بعد الدهان
  R / Flumox cap.
  كبسولة كل ٨ ساعات
- Skin grafting is needed for full thickness burns as soon as possible to limit infection .
- Antitetanic serum & anti-gas gangerene serum is needed.

Chapetr -12
Blood Diseases
(Haematology)

Hemophilia

Definition
Hemophilia is a hereditary bleeding disorder in which it takes a long time for the blood to clot and abnormal bleeding occurs. This disease affects mostly males. Diseases in this category include:

- hemophilia A
- hemophilia B
- von Willebrand's disease

Hemophilia A

Definition Hemophilia A is a hereditary bleeding disorder caused by a lack of the blood clotting factor VIII.

Causes, incidence, and risk factors
Hemophilia A results from a deficiency (lack) of clotting factor VIII.

The disorder is caused by an inherited X-linked recessive trait, with the defective gene located on the X chromosome. That means the disorder occurs primarily in males. Females carry two copies of the X chromosome, so if the factor VIII gene on one chromosome doesn't work, the gene on the other chromosome can do the job. Males, however, carry only one X chromosome, so if the factor VIII gene on that chromosome is broken, they will have hemophilia A.

If a woman has a defective factor VIII gene, she is considered a carrier. The gene can be passed down to her children. Half of the male babies born from women who carry the defective gene have the disease. Half of the female babies born from women who have the defective gene are carriers. All female children of men with hemophilia carry the defective gene.

The severity of symptoms can vary. Severe forms become apparent early on. Bleeding is the main symptom of the disease and sometimes, though not always, occurs if an infant is circumcised. Additional bleeding problems are seen when the infant starts crawling and walking.

Mild cases may go unnoticed until later in life when they occur in response to surgery or trauma. Internal bleeding may happen anywhere, and bleeding into joints is common. Risk factors are a family history of bleeding and being male.

Symptoms

- Bruising
- Spontaneous bleeding
- Bleeding into joints and associated pain and swelling
- Gastrointestinal tract and urinary tract hemorrhage
- Blood in the urine or stool
- Prolonged bleeding from cuts, tooth extraction, and surgery

Signs and tests

Many blood clotting tests are performed if the person tested is the first one in the family to have a bleeding disorder. Once the defect has been identified, other family members will need less testing to diagnose the disorder.

Tests include:

- Prolonged PTT
- Normal prothrombin time
- Normal bleeding time
- Normal fibrinogen level
- Low serum factor VIII activity

Treatment

- Standard treatment involves replacing the missing clotting factor. The amount of factor VIII concentrates needed depend upon the severity of bleeding, the site of the bleeding, and the size of the patient.

- Mild hemophilia may be treated with desmopressin (DDAVP), which helps the body release factor VIII that is stored within the lining of blood vessels.

R / Minirin nasal Spray .
بخة للأنف حتى يتوقف النزيف

- To prevent a bleeding crisis, people with hemophilia and their families can be taught to give factor VIII concentrates at home at the first signs of bleeding. People with severe forms of the disease may need regular preventative treatment.

- Depending on the severity of the disease, DDAVP or factor VIII concentrate may be given prior to dental extractions and surgery to prevent bleeding.

Immunization with Hepatitis B vaccine is necessary because of the increased risk of exposure to hepatitis due to frequent infusions of blood products.

Patients who develop an inhibitor to factor VIII may require treatment with other clotting factors such as factor VIIa, which can aide clotting even in the absence of factor VIII.

Hemophilia B

Definition Hemophilia B is a hereditary blood coagulation disorder. It is caused by a deficiency of a blood plasma protein called factor IX that affects the clotting property of blood.

Causes, incidence, and risk factors

Hemophilia A is 7 times more common than hemophilia B.

Hemophilia B is the result of a deficiency of clotting factor IX.

The disorder is caused by an inherited X-linked recessive trait, with the defective gene located on the X chromosome. Thus, the disorder occurs primarily in males. Females carry two copies of the X chromosome, so if the factor IX gene on one chromosome is defective, the other can compensate. Males, however, carry only one X chromosome, so if the factor IX gene on that chromosome is defective, they have the disease.

Females with one defective factor IX gene are carriers of this trait. Fifty percent of the male offspring of female carriers will have the disease, and 50% of their female offspring will be carriers. All female children of a male hemophiliac will be carriers of the trait.

The severity of symptoms can vary with this disease, and the severe forms become apparent early on. Bleeding is the hallmark of the disease and sometimes, though not always, occurs if an infant is circumcised. Additional bleeding manifestations make their appearance when the infant becomes mobile.

Mild cases may go unnoticed until later in life, when they occur in response to surgery or trauma. Internal bleeding may occur anywhere and bleeding into joints is common. Risk factors are a family history of bleeding and being male.

Hemophilia B occurs in about 1 out of 32,000 men.

Symptoms

- Nosebleeds
- Bruising
- Spontaneous bleeding
- Bleeding into joints and associated pain and swelling
- Gastrointestinal tract and urinary tract hemorrhage
- Blood in the urine or stool
- Prolonged bleeding from cuts, tooth extraction, and surgery
- Excessive bleeding following circumcision

Signs and tests

Coagulation studies involving many tests are performed if the person tested is the first one in the family to have a bleeding disorder. Once the defect has been identified, other family members will need less testing to diagnose the disorder.

- PTT is prolonged.
- Prothrombin time is normal.
- Bleeding time is normal.
- Fibrinogen level is normal.
- Serum factor IX is reduced.

Treatment

Standard treatment is infusion of factor IX concentrates to replace the defective clotting factor. The amount infused depends upon the severity of bleeding, the site of the bleeding, and the size of the patient. Hepatitis B vaccine is recommended for individuals with Hemophilia B because they are at increased risk of developing hepatitis due to exposure to blood products.

Depending on the severity of the disease, factor IX concentrate may be given prior to dental extractions and surgery to prevent bleeding.

Von Willebrand disease

Definition Von Willebrand disease is the most common hereditary bleeding disorder.

Causes, incidence, and risk factors

Von Willebrand disease is caused by a deficiency of von Willebrand factor. Von Willebrand factor helps platelets to clump together and stick to the blood vessel wall, which is necessary for normal blood clotting.

Von Willebrand disease affects both men and women. Most cases are mild. Bleeding may occur after surgery or when patient has a tooth pulled. Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) can make this condition worse. Bleeding may decrease during pregnancy.

A family history of a bleeding disorder is the primary risk factor. In women with heavy or prolonged menstrual bleeding, von Willebrand is more common in Caucasian women than African American women.

Symptoms

- Nose bleeds
- Bleeding of the gums
- Abnormal menstrual bleeding
- Bruising
- Skin rash

Signs and tests

- Normal platelet count
- Prolonged bleeding time
- Reduced von Willebrand factor level
- Reduced platelet aggregation (platelet aggregation test)
- Ristocetin co-factor is reduced

This disease may also alter the results of the following tests:

- Factor VIII level
- Von Willebrand factor multimers

Treatment

Medications such as desamino-8-arginine vasopressin (DDAVP) can be given to raise the levels of von Willebrand factor, which will reduce the tendency toward bleeding.

Blood plasma or certain factor VIII preparations may also be used to decrease bleeding.

Some types of von Willebrand disease do not respond to DDAVP. Tests should be done to determine a patient's specific type of von Willebrand disease, before trauma or surgery occurs. A trial of DDAVP can be done prior to surgery to test whether von Willebrand factor levels increase.

Agranulocytosis

Definition

Agranulocytosis is a condition in which there is an insufficient number of white blood cells called neutrophils or granulocytes. This can be caused by a failure of the bone marrow to make sufficient neutrophils, or when white blood cells are destroyed faster than they can be produced. Affected people are susceptible to infections.

Megaloblastic anaemia (Pernicious anemia)

Pernicious anemia refers to a type of autoimmune anemia. Antibodies are directed against intrinsic factor or parietal cells which produce intrinsic factor. Intrinsic factor is required for vitamin B12 absorption, so impaired absorption of vitamin B12 can result. An anemia is a deficiency of the blood cells, but in addition to blood cells, many other cells in the body need vitamin B12, including nerve cells.

The term pernicious anemia is sometimes used more loosely to include non-autoimmune causes of vitamin B12 deficiency.

Diagnosis :

Blood testing typically shows a macrocytic, normochromic anemia, and low levels of serum vitamin B12. A Schilling test can then be used to distinguish between pernicious anemia, vitamin B12 malabsorption, and vitamin B12 deficiency. Approximately 90% of individuals with pernicious anemia have antibodies for parietal cells, however only 50% of individuals with these antibodies have the disease.

Pernicious anaemia is more common among women (1.6 : 1) with a peak occurrence at the age of sixty. It has a hereditary component, and it is notably more common in persons of Northern European ancestry.

Symptoms :

Symptoms may include weakness, an abnormally rapid heartbeat (tachycardia), shortness of breath, chest pains, an upset stomach including diarrhea, difficulty walking, numbness and tingling in the extemities, lack of color (pallor) in the lips, gum, and tongue, and/or depression. Pernicious anemia may cause inflammation of the tongue (glossitis). It is also associated with premature greying, blue eyes, vitiligo, and blood group A.

It is also associated with unpredictable periods of fatigue and an inability to concentrate. Irreversible Central Nervous System (CNS) damage may have occurred prior to Treatment. Scissors gait can appear as a late sign of unchecked anemia.

Some sufferers also report mouth ulcers, joint pain and tinnitus as associated with the onset of pernicious anemia.

Treatment :

R / Betolvex amp.
Or : Depovit-B12 Amp .
أمبول بالعضل أسبوعيا

R / Folic acid 5 mg tab.
قرص واحد يوميا

Notes : Treatment is with vitamin B_{12} (hydroxycobalamin or cyanocobalamin) injected intramuscularly. Body stores (in the liver) are refilled with half a dozen injections in the first couple of weeks and then maintenance with monthly to quarterly injections throughout the life of the patient.

B12 has traditionally been given parenterally to ensure absorption. However, oral replacement is now an accepted route, as it has become increasingly appreciated that

Iron deficiency anemia

Having iron deficiency anemia may cause to feel tired and often look pale. It's a common type of anemia — a condition in which blood is lacking healthy red blood cells, which carry oxygen to tissues. Oxygenated blood gives the body energy and skin a healthy color.

As the name implies, iron deficiency anemia is due to insufficient iron. the body needs the element iron to make hemoglobin, a substance in red blood cells that enables them to carry oxygen.

Iron deficiency anemia is common, especially in women. One in five women and half of all pregnant women are iron deficient. Lack of iron in diet is one cause of iron deficiency anemia, but there are other causes as well.

Correction of iron deficiency anemia by iron supplementation. Sometimes, other Treatments are necessary if patient is bleeding internally.

Signs and symptoms

In general, anemia causes extreme fatigue, pale skin, weakness, shortness of breath, lightheadedness, and often cold hands and feet.

Signs and symptoms of iron deficiency anemia in particular may include:

- Inflammation or soreness of tongue
- Brittle nails
- Unusual cravings for non-nutritive substances, such as ice, dirt or pure starch
- Headache
- Poor appetite, especially in infants and children with iron deficiency anemia

Some people with iron deficiency anemia experience restless legs syndrome — an uncomfortable tingling or crawling feeling in legs that's generally relieved by moving them.

Causes

Blood consists of liquid called plasma and three types of blood cells:

- White blood cells. These blood cells fight infection.
- Platelets. These blood cells help blood clot after a cut.
- Red blood cells (erythrocytes). These blood cells carry oxygen from lungs, by way of bloodstream, to brain and the other organs and tissues. The body needs a supply of oxygenated blood to function. Oxygenated blood helps give the body its energy and skin a healthy glow.

Red blood cells contain hemoglobin, an iron-rich substance that gives blood its red color. Hemoglobin enables red blood cells to carry oxygen from lungs to all parts of the body.

Red blood cells are manufactured in bone marrow — a red, spongy material located within the cavities of many of large bones, such as pelvic bones. Bone marrow needs iron, along with vitamins, to produce hemoglobin and red blood cells. The body gets vitamins and iron from the foods . The body also recycles iron from old red blood cells.

Patient can be mildly deficient in iron and not develop anemia. Iron deficiency leads to anemia when the body lacks sufficient iron to make adequate hemoglobin. Without enough hemoglobin, red blood cells are smaller and paler than normal, and they can't carry adequate oxygen to tissues.

Causes of iron deficiency anemia include:

- Blood loss. Blood contains iron within red blood cells. If Patient loses blood, he loses some iron. Women with heavy periods are at risk of iron deficiency anemia because they lose a lot of blood during menstruation. Slow, chronic blood loss from a source within the body — such as a peptic ulcer, a hiatal hernia, a kidney or bladder tumor, a colon polyp, colorectal cancer, or uterine fibroids — can cause iron deficiency anemia. Gastrointestinal bleeding from regular use of aspirin or nonsteroidal anti-inflammatory drugs (NSAIDs) or bleeding from hemorrhoids also can be a source of iron loss and anemia. While not common in the United States, hookworm infestation can cause blood loss. Blood lost from within the body may show up in urine or stools, producing black or bloody stools.
- A lack of iron in diet. the body regularly gets iron from the foods eaten. If too little iron is consumed, over time the body can become iron deficient. Examples of iron-rich foods include meat, eggs and whole-grain or iron-fortified foods.

Infants and children need iron from their diet, too.

An inability to absorb iron. Iron from food is absorbed into bloodstream in small intestine. An intestinal disorder such as Crohn's disease or celiac disease, which affects intestine's ability to absorb nutrients from digested food, can lead to iron deficiency anemia. If part of small intestine has been bypassed or removed surgically, that may affect ability to absorb iron and other nutrients. Some medications can interfere with iron absorption. For example, regular use of prescription-strength stomach acid blockers called proton pump inhibitors may lead to iron deficiency anemia, although this is rare. The body needs stomach acid, which these products suppress, to convert dietary iron into a form that can readily be absorbed by the small intestine.

- Pregnancy. Without iron supplementation, iron deficiency anemia occurs in many pregnant women because their iron stores need to serve their own increased blood volume as well as be a source of hemoglobin for the growing fetus. A fetus needs iron to develop red blood cells, blood vessels and muscle.

Risk factors

These factors may increase the risk of iron deficiency anemia:

- Heavy menstrual periods
- Pregnancy
- A diet consistently low in iron
- A known or hidden source of bleeding within the body, such as an ulcer, a bleeding tumor, a uterine fibroid, a colon polyp, colorectal cancer, gastrointestinal bleeding or hemorrhoids

These groups of people may be at higher risk:

- Women. Because their bodies store less iron and because they lose blood during menstruation, women in general are at greater risk of iron deficiency anemia.
- Infants and children. Infants who don't get enough iron in their milk or formula may risk deficiency. Children need extra iron during growth spurts, because iron is also important for muscle development. If child isn't eating a healthy, varied diet, he or she may be at risk of anemia.
- Vegetarians. Because vegetarians don't eat meat, they're at greater risk of iron deficiency anemia. Iron that comes from grains and vegetables isn't absorbed by the body as well as is iron that comes from meat.

In healthy men and postmenopausal women, iron deficiency usually points to bleeding somewhere in the gastrointestinal tract.

Donating blood — a source of blood loss — usually isn't a risk factor for iron deficiency anemia. However, some people first learn their hemoglobin is low, which indicates anemia, when they go to donate blood. Low hemoglobin may be a temporary problem remedied by eating more iron-rich foods. It may also be a warning sign of blood loss in the body.

Screening and Diagnosis

- Hb % & blood picture : show hypochromic microcytic anemia , normal platelets & white cell count .

With iron deficiency anemia, red blood cells are smaller and paler in color than normal.

Normal levels of hemoglobin range between 11.1 and 15.0 grams per deciliter (g/dL). hemoglobin is low if:

- For women, it's less than 10 g/dL
- For men, it's less than 12 g/dL

Additional diagnostic tests

Required in case of a source of bleeding is suspected within the body .

Blood in the stools is often an indicator of internal bleeding.

- Endoscopy. check for bleeding from a hiatal hernia, bleeding ulcers and stomach bleeding with the aid of endoscopy.
- Colonoscopy. to view some or all of colon and rectum to look for internal sources of bleeding.

Complications

Mild iron deficiency anemia usually doesn't cause complications. However, left untreated, iron deficiency anemia can become severe and lead to health problems, including the following:

- Heart problems. Iron deficiency anemia may lead to a rapid or irregular heartbeat. Heart must pump more blood to compensate for the lack of oxygen in the blood when patient is anemic. In people with coronary artery disease — narrowing of the arteries that feed the heart — unchecked anemia can lead to angina. Angina is chest pain caused by decreased oxygen and blood flow to the heart muscle.

- Problems during pregnancy. In pregnant women, severe iron deficiency anemia has been linked to premature births and low birth weight babies. But the condition is easily preventable and treatable in pregnant women who receive iron supplements as part of their prenatal care.

- Growth problems. In infants and children, severe iron deficiency can lead to anemia as well as delayed growth. Untreated iron deficiency anemia can cause physical and mental delays in infants and

children in areas such as walking and talking.

Treatment

- eating foods rich in iron include red meat, seafood, poultry and eggs , whole-grain, iron-fortified cereals, breads and pastas. Beans and peas, dark green leafy vegetables — such as spinach — and raisins, nuts, and seeds also contain iron..

Adult :
R / Ferose tab.
Or : Fefol Cap.
Or : Haemoton cap.
قرص أو كبسولة مرة واحدة يوميا بعد الاكل

Injectable iron can be used :

R / Ferosac amp.
Or : cosmofer amp.
أمبول بالعضل يوميا أو يوم بعد يوم

Pediateric :
R / fer-in-sol oral drops .
١٠ – ١٥ نقطة بالفم ٣ مرات يوميا

Children :
R / ferose Syrup.
Or : Ferroglobin Syrup.
ملعقة ١-٢ مرة يوميا

N.B : Treatment should be continued for several months or longer until Hb level return to normal .

N.B. iron can irritate stomach, so it should be taken with food. Coated versions of iron tablets are easier on stomach. Vitamin C in orange juice or tablet form helps increase iron absorption.

Iron supplements can cause constipation, so should be taken with a stool softener or a laxative. Iron almost always turns stools black .

Treating causes other than poor diet If iron supplements alone don't increase blood-iron levels in adults, it's likely the anemia is due to more than an iron-poor diet. It may be due to a source of bleeding or an iron-absorption problem. Depending on the cause, Treatment may involve:

- Medications such as oral contraceptives to lighten heavy menstrual flow
- Antibiotics to treat ulcers
- Surgery to remove a bleeding polyp, a tumor or a fibroid

If iron deficiency anemia is severe, blood transfusions can help replace iron and hemoglobin quickly.

Hemolytic anemia

Definition Hemolytic anemia is a condition where there are not enough red blood cells in the blood. It is caused by premature destruction of red blood cells. There are a number of specific types of hemolytic anemia, which are described individually.

Causes, incidence, and risk factors

Hemolytic anemia occurs when the bone marrow is unable to make up for premature destruction of red blood

cells by increasing their production. When the marrow is able to make up the loss, anemia does not occur.

There are many types of hemolytic anemia, which are classified by the location of the defect. The defect may be in the red blood cell itself (intrinsic factor), or outside the red blood cell (extrinsic factor).

Causes of hemolytic anemia include infection, certain medications, autoimmune disorders, and inherited disorders. Types of hemolytic anemia include:

- Sickle-cell anemia
- Paroxysmal nocturnal hemoglobinuria
- Hemoglobin SC disease (similar in symptoms to sickle-cell anemia)
- Hemolytic anemia due to G6PD deficiency (Favism)
- Hereditary elliptocytosis
- Hereditary spherocytosis
- Hereditary ovalocytosis
- Idiopathic autoimmune hemolytic anemia
- Non-immune hemolytic anemia caused by chemical or physical agents
- Secondary immune hemolytic anemia
- Thalassemia

Symptoms

- Chills
- Fatigue
- Pale skin color
- Shortness of breath
- Rapid heart rate
- Yellow skin color (jaundice)
- Dark urine
- Enlarged spleen

Signs and tests

These are tests for hemolysis (red blood cell destruction). There are specific tests which identify the specific types of hemolytic anemia. They are performed after hemolysis has been established.

- Elevated indirect bilirubin levels
- Low serum haptoglobin
- Hemoglobin in the urine
- Hemosiderin in the urine
- Increased urine and fecal urobilinogen
- Elevated absolute reticulocyte count
- Low red blood cell count (RBC) and hemoglobin
- Elevated serum LDH

Direct measurement of the red cell life span by radioactive tagging techniques shows a shortened life span.

Treatment

Treatment depends upon the type and cause of the hemolytic anemia. Folic acid, iron replacement, and corticosteroids may be used. In emergencies, transfusion of blood may be necessary.

Treatment depend on the type :

In Favism : Avoid all substances that cause hemolysis e.g. Soya beans , sulphonamides , antimalarials , analgesics ,... e.t.c .

G6PD = Favism ملحوظة : ما هى الأشياء التى يمنع مريض

١- الطعمية – الفول – البسارة .
٢- جميع الأدوية الخافضة للحرارة ما عدا البار امول .
٣- جميع أدوية الإسهال التى تحتوى على السلفا .
٤- جميع الأدوية التى تحتوى على الكلور .
٥- أدوية علاج الملاريا .
٦- فيتامين ك الصناعى .
٧- رائحة النفتالين و الكلور .

In Thalassemia :

- Spleenectomy
- Avoid excessive blood transfusion or iron preperations → hemochromatosis .
- R / Desferal 400mg vial .
  ٠,٥ – ١ جم بالعضل يوميا
  (to remove excess iron).

In Paroxysmal nocturnal hemoglobinuria :

- Avoid acidifying agent .
- Spleenectomy
- Corticosteroids :

R / predilone 5 mg tab.
٤-٨ أقراص يوميا

- Oral iron :

R / Ferose tab.
قرص بعد الأكل مرتين يوميا

- I.V. heparin cautiously in thrombotic cases .

In spherocytosis : Spleenectomy

In idiopathic autoimmune hemolytic anemia :
R / Hostacortin 5 mg tab.
٤-٨ أقراص يوميا حتى تتحسن الحالة ثم تخفض تدريجيا
R / Folic acid 5 mg tab. قرص يوميا

- Splenectomy if no response to steroids .

In sickle cell anemia : mentioned below .

Sickle cell anemia

Sickle cell anemia is an inherited form of anemia — a condition in which there aren't enough healthy red blood cells to carry oxygen throughout the body.

Under normal circumstances, red blood cells are flexible and round, and they move easily through blood vessels to carry oxygen to all parts of the body. In people with sickle cell anemia, the red blood cells become rigid and sticky and are shaped like sickles or crescent moons. These irregular-shaped blood cells die prematurely, resulting in a chronic shortage of red blood cells. Plus, they can get stuck when traveling through small blood vessels, which can slow or block blood flow and oxygen to certain parts of the body. This produces pain and can lead to serious complications.

There's no cure for most people with sickle cell anemia. However,

treatments can relieve pain and prevent further problems.

Signs and symptoms

People with sickle cell trait have one gene for the disease. They don't develop the disease and usually have no signs and symptoms.

People with sickle cell anemia have two genes for the disease — one from each parent. They usually show some signs and symptoms after four months of age. Some people with sickle cell anemia have mild symptoms. Others have severe symptoms and need frequent hospitalization.

Signs and symptoms of the disease include:

- Anemia. Sickle cells are fragile. They break apart easily and die, leaving the body chronically short on red blood cells to carry oxygen to tissues — a condition known as anemia. Without enough red blood cells in circulation, the body can't get the oxygen it needs to feel energized. That's why anemia causes fatigue.

- Episodes of pain. Periodic episodes of pain, called crises, are a major symptom of sickle cell anemia. Pain develops when sickle-shaped red blood cells block blood flow through tiny blood vessels to chest, abdomen and joints. Pain can also occur in bones. The pain may vary in intensity and can last for a few hours to a few weeks. Some people experience only a few episodes of pain. Others experience a dozen or more crises a year. If a crisis is severe enough, the patient may need hospitalization for painkillers to be injected into veins (intravenously).

- Hand-foot syndrome. Swollen hands and feet are often the first signs of sickle cell anemia in babies. The swelling is caused by sickle-shaped red blood cells blocking blood flow out of the hands and feet. Hand-foot syndrome is often accompanied by pain and fever.

- Jaundice. Jaundice is a yellowing of the skin and eyes that occurs because of liver damage or dysfunction. Occasionally, people who have sickle cell anemia have some degree of jaundice because the liver, which filters harmful substances from the blood, is overwhelmed مَغْمُور by the rapid breakdown of red blood cells. In people with dark skin, jaundice is visible mostly as yellowing of the whites of their eyes.

- Frequent infections. Sickle cells can damage spleen, an organ that fights infection. This may make the patient more vulnerable ضعيف to infections. Doctors commonly give infants and children with sickle cell anemia antibiotics to prevent potentially life-threatening infections, such as pneumonia.

- Stunted growth إعاقة النمو. Red blood cells provide the body with the oxygen and nutrients needed for growth. A shortage of healthy red blood cells can slow growth in infants and children and delay puberty in teenagers.

- Vision problems. Some people with sickle cell anemia experience vision problems. Tiny blood vessels that feed eyes may become plugged with sickle cells. This can damage the retina — the portion of each eye that processes visual images.

Causes

Sickle cell anemia is caused by a mistake in the gene that tells the body to make hemoglobin — the red, iron-rich protein that gives blood its red color. Hemoglobin is a component of every red blood cell in the body. It allows red blood cells to carry oxygen from lungs to all parts of the body, and to carry carbon dioxide waste from other parts of the body to lungs so that it can be exhaled.

Under normal circumstances, the body makes healthy hemoglobin known as hemoglobin A. People with sickle cell anemia make hemoglobin S — the S stands for sickle.

The sickle cell gene is passed from generation to generation in a pattern of inheritance called autosomal recessive inheritance. This means that *both* the mother and father must pass on the defective form of the gene for a child to be affected. Most often, sickle cell disease is passed down the family tree by parents who have sickle cell trait.

People with sickle cell trait have one normal hemoglobin gene and one defective form of the gene. So their bodies make both normal hemoglobin and sickle cell hemoglobin. Their blood may contain some sickle cells, but they usually don't experience symptoms unless they're in an area with low oxygen — such as at high altitudes on an airplane or on a mountain. However, they are carriers of the disease, which means they can pass the defective gene on to their children.

Two carriers have a 25 percent chance of having an unaffected child with normal hemoglobin, a 50 percent chance of having a child who also is a carrier, and a 25 percent chance of having a child with sickle cell anemia. These chances are the same in each pregnancy.

Evolution of a defective gene
Researchers believe the defective hemoglobin gene that causes sickle cell anemia evolved many years ago, among people living in parts of Africa, the Mediterranean, the Middle East and India. At that time, malaria epidemics killed many people in those regions.

How defective hemoglobin causes anemia

Red blood cells with normal hemoglobin are smooth and round and glide through blood vessels. Red blood cells with defective hemoglobin may become hard, sticky and shaped

like a sickle used to cut wheat. These crescent-shaped cells can get stuck in small blood vessels, blocking blood flow and causing episodes of pain and damage to organs.

bone marrow (the red, spongy material found within the cavity of many of large bones) regularly produces red blood cells. Bone marrow also produces white blood cells to fight infections and platelets to help blood clot. These two types of blood cells aren't directly involved in sickle cell anemia.

Once red blood cells leave bone marrow, they normally live for about three to four months before they die and need to be replaced. However, sickle cells die after only 10 to 20 days. So, it's difficult for the body to produce enough replacements. The result is a chronic shortage of red blood cells, known as anemia.

Screening and Diagnosis

A blood test can check for hemoglobin S (the defective form of hemoglobin that underlies sickle cell anemia).

Additional steps

To confirm any Diagnosis, a sample of blood is examined under a microscope to check for large numbers of sickle cells — a marker of the disease.

- a blood test to check for anemia — a low red blood cell count.

Complications

Sickle cell anemia can lead to a host of complications, including:

- Stroke. A stroke can occur if sickle cells block blood flow to an area of the brain.
- Acute chest syndrome. This life-threatening complication of sickle cell anemia causes chest pain, fever and difficulty breathing..
- Organ damage. Sickle cells can block blood flow through blood vessels, immediately depriving تحرم an organ of blood and oxygen. Chronic deprivation of oxygen-rich blood can damage nerves and organs in the body, including kidneys, liver and spleen. Organ damage can be fatal.
- Blindness. Tiny blood vessels that feed eyes can get plugged with sickle cells. Over time, this can damage the retina (the portion of each eye that processes visual images) and lead to blindness.
- Other complications. Sickle cell anemia can cause open sores, called ulcers, on legs. Sickle cells can block blood vessels that nourish skin, causing skin cells to die. Once skin is damaged, sores can develop. Gallstones also are a possible complication. The breakdown of red blood cells produces a substance called bilirubin. Bilirubin is responsible for yellowing of the skin and eyes (jaundice) in people with

sickle cell anemia. A high level of bilirubin in the body can also lead to gallstones. Men with sickle cell anemia may experience painful erections, a condition called priapism. Sickle cells can prevent blood flow out of an erect penis. Over time, priapism can damage the penis and lead to impotence in men with sickle cell anemia.

Treatment

- Bone marrow transplant offers the only potential cure for sickle cell anemia. But very few people have a suitable donor for transplant.

- As a result, Treatment is usually aimed at avoiding crises, relieving symptoms and preventing complications. Also check red blood count. Treatments may include medications to reduce pain and prevent complications, blood transfusions and supplemental oxygen, as well as bone marrow transplant.

Medications

Medications used to treat sickle cell anemia include:

- Antibiotics. Children with sickle cell anemia need to start taking the antibiotic penicillin when they reach 2 to 4 months of age and continue until they're 5 years old. Doing so helps prevent infections such as pneumonia, which can be life-threatening to an infant or child with sickle cell anemia. Antibiotics may also help adults with sickle cell anemia fight certain infections.

- Pain-relieving medications. To relieve pain during a sickle crisis, using over-the-counter pain relievers and application of warm heat to the affected area.

- Hydroxyurea (Droxia, Hydrea). This prescription drug, normally used to treat cancer, may be helpful for adults with severe disease. When taken daily, it reduces the frequency of painful crises and may reduce the need for blood transfusions. It seems to work by stimulating production of fetal hemoglobin — a type of hemoglobin found in newborns that helps prevent the formation of sickle cells. There is some concern about the possibility that long-term use of this drug may cause tumors or leukemia.

- Blood transfusions
Blood transfusions increase the number of normal red blood cells in circulation, helping to relieve anemia. In children with sickle cell anemia at high risk of stroke, regular blood transfusions can cut the risk of a first or second stroke significantly.

Blood transfusions carry some risk. Blood contains the mineral iron. Regular blood transfusions cause an excess amount of iron to build up in the body. Because excess iron can damage heart, liver and other organs,

people who undergo regular transfusions must often receive Treatment to reduce iron levels.

Supplemental oxygen

It may be helpful if the patient has acute chest syndrome or a sickle cell crisis.

Bone marrow transplant

This procedure allows people with sickle cell anemia to replace their bone marrow — and its sickle-shaped red blood cells — with healthy bone marrow from a donor who doesn't have the disease. It can be a cure, but the procedure is risky, and it's difficult to find suitable donors. Researchers are still studying bone marrow transplants for people with sickle cell anemia. Currently, the procedure is only recommended for people who have significant symptoms and problems from sickle cell anemia.

Aplastic anemia

Coursing through bloodstream is a variety of blood cells — red blood cells, white blood cells and platelets. All are important to health. Red blood cells carry oxygen, white blood cells fight infection, and platelets help blood clot.

In aplastic anemia, the body stops producing enough new blood cells. This means patient is fatigued and at higher risk of infections and uncontrolled bleeding.

Signs and symptoms

- Fatigue
- Shortness of breath with exertion
- Rapid heart rate
- Pale skin
- Frequent or prolonged infections
- Unexplained or easy bruising
- Nosebleeds and bleeding gums
- Prolonged bleeding from cuts
- Skin rash

Causes

Bone marrow has a critical function. It contains special cells called stem cells, which are precursors of other cells. Stem cells in the bone marrow produce blood cells (red cells, white cells and platelets)that eventually leave the bone marrow and enter bloodstream. Stem cells also make more stem cells.

bone marrow needs to continually produce new blood cells of all types to replace old ones. Red blood cells live about four months, platelets about a week and most white blood cells a day or less before they're used and absorbed by the body.

Damage to bone marrow

Normally, bone marrow supplies the right numbers of blood cells to keep healthy. Aplastic anemia develops when damage occurs to bone marrow, slowing or shutting down the production of new blood cells — a serious problem. Factors that can

temporarily or permanently injure bone marrow include:

- High-dose radiation and chemotherapy Treatments. These cancer-fighting therapies kill cancer cells. But they also damage healthy cells, including stem cells in bone marrow. Secondary aplastic anemia can be a temporary side effect of these Treatments.

- Exposure to toxic chemicals. Secondary aplastic anemia has been linked to exposure to toxic chemicals, such as some used in pesticides and insecticides. Exposure to benzene — an ingredient in gasoline, mothballs, paint and varnish removers, dry-cleaning solutions, and some glues and household cleaners — also has been linked to secondary aplastic anemia. This type of anemia sometimes gets better on its own if patient avoids repeated exposure to the chemicals that caused the initial illness.

- Use of certain drugs. Some medications to treat rheumatoid arthritis, some antibiotics, as well as some illegal drugs can cause secondary aplastic anemia.

- Autoimmune disorders. An autoimmune disorder such as lupus, in which the body's immune system begins attacking healthy cells, may involve stem cells in the bone marrow.

- A viral infection. In some people, aplastic anemia may be related to a viral infection that affects the bone marrow.

- Pregnancy. Aplastic anemia may occur in pregnancy, but this is rare. It may be related to an autoimmune problem — the body's immune system begins attacking the bone marrow during pregnancy.

- Bone marrow diseases. Diseases that affect bone marrow can eventually lead to an added Diagnosis of aplastic anemia.

- Unknown factors. In about half of cases, doctors aren't able to identify the cause of aplastic anemia. This is called idiopathic aplastic anemia.

Screening and **Diagnosis**

- Blood tests.

- Bone marrow biopsy.

Treatment

Blood transfusions

Most people with aplastic anemia require multiple blood transfusions — transfusions of red blood cells or platelets, or both. Blood transfusions aren't a cure for aplastic anemia. But they do relieve symptoms by providing blood cells that bone marrow isn't producing.

Immune-suppressing drugs

Aplastic anemia may be due to an autoimmune disorder that's causing

body's immune system to attack and damage cells in bone marrow. To prevent this from continuing, doctors sometimes treat aplastic anemia with drugs that alter or suppress the immune system.

Drugs such as cyclosporine (Gengraf, Neoral, Sandimmune) and anti-thymocyte globulin (Thymoglobulin) are examples. These drugs suppress the activity of immune cells that are damaging bone marrow. This helps bone marrow recover and generate new blood cells. Cyclosporine and anti-thymocyte globulin are often used in combination. This option is usually the Treatment of choice for older people with aplastic anemia and for those without a matching donor for bone marrow transplant.

Corticosteroids, such as methylprednisolone (Medrol, Solu-Medrol), are often given at the same time as these drugs to lessen their side effects.

Immune-suppressing drugs can be very effective at treating aplastic anemia. The downside is that these drugs further weaken immune system. It's also possible that after stop taking these drugs, aplastic anemia may return.

Bone marrow transplantation

Bone marrow transplantation may offer the only successful Treatment option for people with severe aplastic anemia.

Antibiotics

Having aplastic anemia weakens immune system. patient have fewer white blood cells in circulation to fight off germs. This leaves patient susceptible to all kinds of infections — everything from colds to more-serious illnesses.

- Male hormones. Researchers are investigating a synthetic version of the male hormone androgen as atreatment for aplastic anemia. The drug, which also stimulates blood cell production
- Peripheral stem cell transplants.

Acute lymphocytic leukemia (ALL)

Definition Acute lymphocytic leukemia is a progressive, malignant disease characterized by large numbers of immature white blood cells that resemble lymphoblasts. These cells can be found in the blood, the bone marrow, the lymph nodes, the spleen, and other organs.

Causes, incidence, and risk factors

Acute lymphocytic leukemia (ALL) accounts for 80% of the acute leukemias of childhood, with most cases occurring between ages 3 and 7. ALL also occurs in adults, where it accounts for 20% of all adult leukemias.

In acute leukemia, the malignant (cancerous) cell loses its ability to mature and specialize (differentiate) its function. These cells multiply rapidly and replace the normal cells. Bone marrow failure occurs as

malignant cells replace normal bone marrow elements. The person becomes susceptible to bleeding and infection because the normal blood cells are reduced in number.

Most cases seem to have no apparent cause. However, radiation, some toxins such as benzene, and some chemotherapy agents are thought to contribute to brining on leukemia. Abnormalities in chromosomes may also play a role in the development of acute leukemia.

Symptoms

- Prolonged or excessive bleeding, bruising easily
- Bleeding gums
- Nosebleeds
- Bleeding into the skin
- Menstrual irregularities
- Skin rash or lesion
    - Pinpoint red spots (petechiae)
    - Bruises (ecchymoses)
- Paleness
- Fatigue
- Infection
- Sternal tenderness
- Bone pain or tenderness
    - Breastbone (sternum)
- Joint pain
    - Hip pain
    - Knee pain
    - Ankle pain
    - Foot pain over small joints of the foot
    - Shoulder pain
    - Elbow pain
    - Wrist pain
    - Hand pain over small joints of the hand
- Lymphadenopathy (enlarged glands)
- Unintentional weight loss
- Fever
- Swollen gums
- Shortness of breath (made worse by exercise)
- Sensations of feeling the heart beat (palpitations) with an irregular pattern

Signs and tests

A physical exam and lab tests may reveal the following:

- Enlarged liver and spleen
- Bruising (ecchymosis)
- Evidence of bleeding (petechiae, purpura)
- Abnormal WBC count
- A CBC shows anemia
- Low platelet count
- A bone marrow aspiration shows an increased number of cells (hypercellularity) and an increase in lymphoblasts.

ALL may also alter the results of the following tests:

- T (thymus derived) lymphocyte count
- Cell surface antigen studies (B-cell, leukemia/lymphoma panel)
- White blood cell differential

Classification of ALL now depends on a number of sophisticated tests, such as immunophenotyping, karyotyping, and terminal deoxynucleotidyltransferase (TdT) activity. The combined results of these tests allow pinpoint molecular

diagnosis, which helps guide the treatment decisions, and clarify the likely prognosis.

For instance, the cells of some leukemias contain chromosomal abnormalities. Those with the Philadelphia chromosome or with the t(4;11) translocation would tend to have a poor prognosis, thus intensive treatment and an early bone marrow transplant might be recommended immediately. Other genes (such as the TEL/AML1 rearrangement) can indicate a very favorable prognosis.

Treatment

The goal of treatment is remission of the cancer. A remission is achieved when the peripheral blood counts and the bone marrow are normal.

Acute lymphocytic leukemia is treated with a combination of anti-cancer drugs (chemotherapy). A hospitalization of 3 to 6 weeks may be necessary for initial (induction) chemotherapy, however, subsequent chemotherapy sessions may be given on an outpatient basis. Additionally, the patient may need to be isolated if the lymphocyte count is very low to prevent catching an infection.

Chemotherapy typically consists of a combination of 3 to 8 medications which may include: prednisone, vincristine, methotrexate, 6-mercaptopurine, and cyclophosphamide. It may also be necessary to administer blood products (e.g., packed red blood cells, platelets) to treat the anemia and low platelet count. Antibiotic therapy may be required to treat any secondary infections that develop.

After remission is achieved, chemotherapy or radiation therapy may be given in the spinal column to treat any leukemia cells that may have invaded the spinal fluid.

Subsequent therapy is meant to prevent relapse and consists of additional chemotherapy given intermittently, either in the hospital or as an outpatient. This treatment may last up to one year. A bone marrow transplant after high-dose chemotherapy may be a treatment option for cases that relapse or do not respond to other treatment s.

Acute myeloid leukemia (AML) Or Acute granulocytic leukemia (AGL)

Definition Acute myelogenous leukemia (AML) is a cancer of blood-forming tissues of the bone marrow. It involves the growth of immature white blood cells.

There are 8 categories of AML, categorized as M0 to M7, based on which blood cells are abnormal.

Causes, incidence, and risk factors

Acute myelogenous leukemia (AML) may occur at any age, but generally occurs in people about age 65. (It may also affect children younger than age 1.)

AML is rarely seen in people younger than 40. A 50 year old has a 1 in 25,000 chance of developing AML. A 70 year old has a 1 in 7,000 chance. The cancer is more common in men than women.

During AML, defective cells in the bone marrow multiply rapidly and replace healthy blood cells.

Bone marrow failure occurs as cancerous cells replace normal bone marrow. The bone marrow is part of the body's immune system. Problems with the immune system can make it harder for the body to fight infection. Patients with AML have an increased risk of bleeding as healthy blood cells drop. They become more prone to infection as the immune system loses its ability to fight off dangerous substances.

In most cases, a cause can not be determined. However, the following are thought to cause some types of leukemia, including AML:

- Radiation
- Dangerous chemicals such as benzene
- Certain chemotherapy drugs, including etoposide and drugs known as alkylating agents

Gene defects may also play a role in the development of AML.

Symptoms

- Prolonged bleeding, bruising easily
- Bleeding gums
- Bleeding from the nose
- Menstrual periods, abnormal
- Skin rash or lesion
- Fatigue
- Fever
- Bone pain or tenderness
- Weight loss
- Swollen gums (rare)
- Shortness of breath aggravated by exercise
- Paleness

Signs and tests

A physical examination may show signs of anemia, pallor, and bleeding. Less commonly, there may be signs of an enlarged spleen, liver, or lymph nodes.

A complete blood count (CBC) shows anemia and a low number of platelets. A white blood cell count (WBC) can be high, low, or normal.

Bone marrow aspiration will show if there are any leukemia cells.

Treatment

The goal of treatment is to kill the cancer cells with chemotherapy. Unfortunately, chemotherapy also harms normal cells. This raises the risk for side effects, such as excessive bleeding caused by low numbers of platelets and infection caused by a low white blood count. It takes several weeks for the bone marrow to recover and start producing normal cells.

Other treatment involves:

- Isolating the patient to prevent infection
- Antibiotics to treat infection

- Transfusions of platelets to control bleeding
- Red blood cell transfusions to fight anemia

After remission is achieved, further treatment called consolidation is necessary to achieve a permanent cure. Consolidation may consist of additional chemotherapy, a bone marrow transplant, or a stem cell transplant. Transplants may also be performed in those whose disease has come back.

Chronic lymphocytic leukemia (CLL)

Definition Chronic lymphocytic leukemia is cancer of the white blood cells (lymphocytes).

Causes, incidence, and risk factors

Chronic lymphocytic leukemia (CLL) causes a slow increase in the number of B lymphocytes in the bone marrow. The cancerous cells spread from the blood marrow to the blood, and can also affect the lymph nodes and other organs. CLL causes the bone marrow to fail and weakens the immune system.

The reason for this increase in B lymphocytes is unknown. There is no link to radiation, cancer-causing chemicals, or viruses.

Usually, the symptoms develop gradually. Many cases are detected by routine blood tests in people with no symptoms.

CLL primarily strikes adults. The average age of a patient with this type of leukemia is 70. It is rarely seen in people younger than 40. The disease is more common in Jewish people of Russian or East European descent, and is uncommon in Asia.

Symptoms

- Enlarged lymph nodes, liver, or spleen
- Fatigue
- Abnormal bruising (occurs late in the disease)
- Excessive sweating, night sweats
- Loss of appetite
- Unintentional weight loss

Signs and tests

Patients with CLL have a higher-than-normal white blood cell count.

Tests to diagnose CLL include:

- CBC
- Flow cytometry
- Bone marrow aspiration
- Serum protein electrophoresis

Treatment

Chemotherapy may be needed if fatigue, anemia, thrombocytopenia, or lymph node swelling occurs. Several chemotherapy drugs are commonly used to treat CLL. A common drug used is chlorambucil (Leukeran). Fludarabine and cyclophosphamide (Cytoxan) may also be used.

R / Leukeran (chlorambucil) 2.5 mg tab.

٠,١ - ٠,١٥ مجم / كجم / يوميا و يستمر حتى تحدث إستجابة ثم تقلل الجرعة .

Rituximab (Rituxan), may also be used alone or in combination with traditional chemotherapy. Alemtuzumab (Campath) is approved for treatment of patients with CLL that have not responded to fludarabine.

- Rarely, radiation may be used for enlarged lymph nodes. Blood transfusions or platelet transfusions may be required. Stem cell transplantation may be used in advances stages of CLL.

Chronic myeloid leukemia (CML)

Or Chronic granulocytic leukemia (CGL)

Definition Chronic myelogenous leukemia is cancer of the bone marrow.

Causes, incidence, and risk factors

CML can occur in adults (usually middle-aged) and children. The disease affects 1 to 2 people per 100,0000 and accounts for 7 - 20% cases of leukemia. It is usually associated with a chromosome abnormality called the Philadelphia chromosome.

CML causes rapid growth of the blood-forming cells (myeloid precursors) in the bone marrow, peripheral blood, and body tissues.

Exposure to ionizing radiation is one possible trigger for this chromosome abnormality. Such exposure could occur from a nuclear disaster كارثة or from treatment of a previous cancer, like thyroid cancer or Hodgkin's lymphoma. However, the vast majority of people treated for cancer with radiation do not go on to develop leukemia. It takes many years to develop leukemia from this cause.

Symptoms

Chronic myelogenous leukemia is grouped into several phases.

The chronic phase that can last for months or years. The disease may have few or no symptoms during this time. Most people are diagnosed by during this stage, when they are being tested for something else.

The accelerated phase is a more dangerous phase, during which the leukemia cells grow more quickly. Acceleration of the disease may be associated with fever (without infection), bone pain, and a swollen spleen.

If untreated, CML progresses to the blast crisis phase. This phase is very difficult to treat and is marked by a very high count of immature white blood cells (leukemia cells). Bleeding and infection may occur due to bone marrow failure.

Other possible symptoms include:

- Fatigue

- Weakness
- Excessive sweating (night sweats)
- Low-grade fever
- Pressure under the left ribs from an swollen spleen
- Bleeding and bruising
- Sudden appearance of small red marks on the skin (petechiae)

Signs and tests

A physical examination often reveals an enlarged spleen. A CBC shows an increased number of white blood cells.

Other tests that may be done include:

- CBC differential
- Bone marrow aspiration
- Testing for the presence of the Philadelphia chromosome
- Molecular assay for the bcr-abl gene

Treatment

Imatinib (Gleevec) is the first line of therapy for all patients. Gleevec blocks the Philadelphia chromosome and is assosicated with very high rates of remission. Similar drugs are being developed.

Sometimes a chemotherapy medicine called hydroxyurea (Hydrea) is used temporarily to control the white blood cell count.

The only known cure for CMS is a bone marrow transplant or stem cell transplantation.

Hodgkin's lymphoma

Definition Hodgkin's lymphoma is a malignancy (cancer) of lymph tissue found in the lymph nodes, spleen, liver, and bone marrow.

Causes, incidence, and risk factors

The first sign of this cancer is often an enlarged lymph node which appears without a known cause. The disease can spread to nearby lymph nodes and later may spread to the lungs, liver, or bone marrow.

The cause is not known. Hodgkin's lymphoma is most common among people 15 to 35 and 50 to 70 years old.

Symptoms

- Painless swelling of the lymph nodes in the neck, armpits, or groin (swollen glands)
- Fatigue
- Fever and chills
- Night sweats
- Weight loss
- Loss of appetite
- Generalized itching

Additional symptoms that may be associated with this disease:

- Excessive sweating
- Skin blushing or flushing
- Neck pain
- Hair loss
- Flank pain
- Clubbing of the fingers or toes
- Splenomegaly

Signs and tests

The disease may be diagnosed after:

- A lymph node biopsy
- A bone marrow biopsy
- A biopsy of suspected tissue
- Detection of Reed-Sternberg (Hodgkin's lymphoma) cells by biopsy

A staging evaluation (tumor staging) may be done to determine the extent of the disease. The following procedures may be done:

- Physical examination
- CT scans of the chest, abdomen, and pelvis
- Bone marrow biopsy
- Blood chemistry tests
- PET scan

In some cases, abdominal surgery to take a piece of the liver and remove the spleen may be needed. However, because the other tests are now so good at detecting the spread of Hodgkin's lymphoma, this surgery is usually unnecessary.

Hodgkin's lymphoma may change the results of the following tests:

- Lymphocyte count
- Small bowel biopsy
- Schirmer's test
- Peritoneal fluid analysis
- Mediastinoscopy with biopsy
- Gallium scan
- Ferritin
- Cytology exam of pleural fluid
- Cryoglobulins
- Bone marrow aspiration
- Blood differential
- ACE levels

Treatment

A staging evaluation is necessary to determine the treatment plan.

- Stage I indicates one lymph node region is involved (for example, the right neck).
- Stage II indicates involvement of 2 lymph nodes on the same side of the diaphragm (for example, both sides of the neck).
- Stage III indicates lymph node involvement on both sides of the diaphragm (for example, groin and armpit).
- Stage IV involves the spread of cancer outside the lymph nodes (for example, to bone marrow, lungs, or liver).

Treatment varies with the stage of the disease.

- Stages I and II (limited disease) can be treated with localized radiation therapy, with chemotherapy or with a combination of both.
- Stages III and IV (extensive disease) are treated with chemotherapy alone or a combination of radiation therapy and chemotherapy.

The following therapeutic regimen is effective :

R / Mustargen HCL 10 mg vials . ٦ مجم لكل متر مربع بالوريد فى اليومين الأول و الثامن

R / Velbe (Vinblastine) 10 mg vials .
٦ مجم لكل متر مربع بالوريد فى اليومين الأول و الثامن

R / Natulan (Procarbazine) 50 mg. Cap.

١٠٠ مجم لكل متر مربع خلال الأيام من الأول إلى الرابع عشر

R / Hostacortin 5 mg tab. ٨ أقراص لكل متر مربع خلال الأيام من الأول حتى الرابع عشر

Chemotherapy can cause low blood cell counts, which can lead to an increased risk of bleeding, infection, and anemia. To minimize bleeding, apply ice and pressure to any external bleeding.

Jaundice الصفراء

What is jaundice?

Jaundice is not an illness, but a medical condition in which too much bilirubin – a compound produced by the breakdown of hemoglobin from red blood cells – is circulating in the blood. This excess of bilirubin causes the skin, eyes, and the mucus membranes (inside of the mouth) to turn a yellowish color. This yellowish color is due to the bilirubin dissolving in the fat layer just below the skin.

Jaundice is common in newborn babies and will usually clear without treatment. However, for adults the symptoms of jaundice usually indicate damage to the liver. If the cause of the jaundice is not treated, liver failure can result.

What causes jaundice?

Jaundice may be caused by a number of factors such as:

- An obstruction of the bile duct, often due to a tumor or gallstone
- Hepatitis: an inflammation of the liver
- Biliary stricture: a narrowing of the duct that transports bile from the liver to the small intestine
- Cirrhosis: a slowly progressing disease in which healthy liver tissue is replaced with scar tissue, eventually preventing the liver from functioning properly
- Pancreatic cancer
- Inadequate blood flow to the liver
- Congenital disorders involving bilirubin
- Malaria: a serious and sometimes fatal disease in humans caused by a parasite transmitted by mosquitoes

What are the symptoms often accompanying jaundice?

- Yellow discoloring of the skin, whites of the eyes (sclera), and mucus membranes
- Dark urine
- Nausea
- Itching
- Light-colored stool (gray or yellow)
- Abdominal pain or swelling

How is jaundice diagnosed?

By :

- Physical examination. However, because the condition has a number of possible causes, the following tests for adults may be needed :

1-Serum bilirubin: A test that measures the concentration of bilirubin in the blood.

2-Complete blood count: A series of blood tests that provides information about the components of blood including red blood cells, white blood cells, and platelets.

3-Prothrombin time: A test that measures the blood's clotting ability

4-Abdominal ultrasound: An abdominal ultrasound uses high-frequency sound waves to produce a "picture" called a sonogram. A sonogram of the liver will show whether it is swollen or abnormal.

5-Liver biopsy: A test where a small sample of the liver's tissue is removed and then analyzed in a laboratory.

How is jaundice treated?

Since jaundice is a symptom, not a specific disorder, treatment for it depends on its cause. This can range from the removal of gallstones or tumors to antibiotics to treat infections, to liver transplant in cases where the liver is severely damaged. However, for conditions like cirrhosis and chronic hepatitis, which are lifelong problems, jaundice may be permanent or recurring.

Chapter -13
Endocrine disorders

Diabetic ketoacidosis

Definition Diabetic ketoacidosis is a complication of diabetes. It is caused by the buildup of by-products of fat breakdown, called ketones. This occurs when glucose is not available as a fuel source for the body, and fat is used instead.

Causes, incidence, and risk factors

People with diabetes lack enough insulin, a hormone the body uses to process glucose (a simple sugar) for energy. When glucose is not available, body fat is broken down instead. The by-products of fat metabolism are ketones. When fat is metabolized, ketones build up in the blood and "spill" over into the urine. A condition called ketoacidosis develops when the blood becomes more acidic than body tissues.

Blood glucose levels rises (usually higher than 300 mg/dL) because the liver produces glucose to try to combat the problem, but the cells cannot take up that glucose without insulin. Diabetic ketoacidosis may lead to the initial diagnosis of type 1 diabetes, as it is often the first symptom that causes the person to come to medical attention. It can also be the result of increased insulin needs in someone already diagnosed with type 1 diabetes. Infection, trauma, heart attack, or surgery can lead to diabetic ketoacidosis in such cases.

People with type 2 diabetes usually develop ketoacidosis only under conditions of severe stress. Not following the prescribed diet and treatment is usually the cause when episodes are repeated.

Symptoms

- Frequent urination or frequent thirst for a day or more
- Fatigue
- Nausea and vomiting
- Muscular stiffness or aching
- Mental stupor that may progress to coma
- Rapid breathing
- Fruity breath (breath odor) رائحة الفواكه أو الأسيتون

Additional symptoms that may be associated with this disease:

- Headache
- Decreased consciousness
- Breathing difficulty while lying down
- Low blood pressure
- Decreased appetite
- Abdominal pain

Signs and tests

- Low blood pressure

- Rapid heart rate
- Signs of dehydration
- High blood glucose (above 300 mg/dL)
- Presence of glucose and ketones in urine by home or office testing
- Serum potassium (may be elevated)
- Serum amylase (may be elevated)
- Arterial blood gas (reveals pH of less than 7.3)

This disease may also alter the results of the following tests:

- Urine pH
- Sodium - urine
- Serum sodium
- Potassium - urine
- Serum phosphorus
- Serum magnesium
- CSF collection
- CO2

Treatment

The goal of treatment is to correct the elevated blood glucose level by giving additional insulin, and to replace fluids lost through excessive urination and vomiting. A person with diabetes may be able to recognize the early warning signs and make appropriate corrections at home, before the condition progresses.

If ketoacidosis is severe, hospitalization is required to control the condition. Insulin replacement will be given, fluid and electrolytes will be replaced, and the cause of the condition (such as infection) will be identified and treated.

1- Soluble or Crystalline insulin :

R / **Actrapid insulin . i.m.** يحقن بالعضل حسب مستوى السكر فى البول والدم

- If B.S > 40 mmol/L (750mg / 100ml) : give 10 units i.m./hr
- If B.S. < 40 mmol/L : give 5 units i.m. / hr .

Continue this regimen until B.S. falls to 250mg / 100ml . adjust the dose of soluble insulin to be given at 4 – hourly intervals .

- Dose of soluble insulin depending on the urine glucose content :

Urine glucose	Insulin dose
2 % or above (++++)	24 units .
1% (+++)	16 units .
3/4 % (++)	12 units
1/2% (+) or –ve	8 units.

2- Fluid replacement :

R / **Saline 0.9%** لتر واحد بالوريد بالنقطة على مدى نصف ساعة ثم لتر على مدى الساعة التالية ثم لتر كل ٤-٦ ساعات

3- Potassium supplement :

R / **KCL solution** . (26 mmol is added to each litre of infused fluid) .

4- Correction of acidosis (Plasma HCO3 < 12 mEq /L) by :

R / **NaHCO3 8.4% solution** .

→ If blood PH is 7-7.1 : give 50 ml i.v. over 1 hr . ٥٠ سم٣ بالوريد على مدى ساعة

→ If blood PH is < 7 give 100ml i.v. over 1 hr . ١٠٠سم٣ بالوريد على مدى ساعة

N.B. Normal PH (7.36 -7.44) .the range which patient can survive within is 7.8-6.8 since alkalinity is more dangerous , correction of acidosis must be gentle .

5- When blood glucose falls to 300mg/100ml saline infusion is replaced by :

R / Dextrose 5 % solution . (1 litre + 26mmol KCL / 6hrs) .
يحقن بالوريد بالنقطة كل ٦ ساعات

6- NGT gastric Aspiration half hourly . Avoid administration of fluids via NGT.
شفط إفرازات المعدة من خلال الأنبوبة

7- Treatment of infection :
R /Cefotax 1 gm vial .
حقنة عضل أو وريد كل ٦ ساعات

Non-Ketotic hyperglycemic coma

Treatment :

1- Frequent injection of Crystalline insulin to adjust blood glucose .
2- Fluid replacement .
3- Treating the cause .

Diabetes mellitus

What is diabetes?

Diabetes is a disease in which blood glucose levels are above normal. People with diabetes have problems converting food to energy. After a meal, food is broken down into a sugar called glucose, which is carried by the blood to cells throughout the body. Cells use insulin, a hormone made in the pancreas, to help them convert blood glucose into energy.

People develop diabetes because the pancreas does not make enough insulin or because the cells in the muscles, liver, and fat do not use insulin properly, or both. As a result, the amount of glucose in the blood increases while the cells are starved of energy. Over the years, high blood glucose, also called hyperglycemia, damages nerves and blood vessels, which can lead to complications such as heart disease and stroke, kidney disease, blindness, nerve problems, gum infections, and amputation.

Types of Diabetes

The three main types of diabetes are type 1, type 2, and gestational diabetes.

- Type 1 diabetes, formerly called juvenile diabetes, is usually first diagnosed in children, teenagers, or young adults. In this form of diabetes, the beta cells of the pancreas no longer make insulin because the body's immune system has attacked and destroyed them.

- Type 2 diabetes, formerly called adult-onset diabetes, is the most common form. People can develop it at any age, even during childhood. This form of diabetes usually begins with insulin resistance, a condition in which muscle, liver, and fat cells do not use

insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. In time, however, it loses the ability to secrete enough insulin in response to meals.

- Gestational diabetes develops in some women during the late stages of pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop type 2 diabetes later in life. Gestational diabetes is caused by the hormones of pregnancy or by a shortage of insulin.

Former Names	Preferred Names
Type I juvenile diabetes insulin-dependent diabetes mellitus IDDM	type 1 diabetes
Type II adult-onset diabetes noninsulin-dependent diabetes mellitus NIDDM	type 2 diabetes

What is pre-diabetes?

In pre-diabetes, blood glucose levels are higher than normal but not high enough to be characterized as diabetes. However, many people with pre-diabetes develop type 2 diabetes within 10 years. Pre-diabetes also increases the risk of heart disease and stroke. With modest weight loss and moderate physical activity, people with pre-diabetes can delay or prevent type 2 diabetes.

How are diabetes and pre-diabetes diagnosed?

The following tests are used for diagnosis:

- A fasting plasma glucose test measures blood glucose after patient has gone at least 8 hours without eating. This test is used to detect diabetes or pre-diabetes.

Table 1. Fasting Plasma Glucose Test

Plasma Glucose Result (mg/dL)	Diagnosis
99 and below	Normal
100 to 125	Pre-diabetes (impaired fasting glucose)
126 and above	Diabetes*

- An oral glucose tolerance test measures blood glucose after patient has gone at least 8 hours without eating and 2 hours after he drinks a glucose-containing beverage. This test can be used to diagnose diabetes or pre-diabetes.

Table 2. Oral Glucose Tolerance Test

2-Hour Plasma Glucose Result (mg/dL)	Diagnosis
139 and below	Normal
140 to 199	Pre-diabetes (impaired

	glucose tolerance)
200 and above	Diabetes*

- In a random plasma glucose test, check blood glucose without regard to the last meal. This test, along with an assessment of symptoms, is used to diagnose diabetes but not pre-diabetes.

Symptoms : increased urination

- increased thirst
- unexplained weight loss

Other symptoms include fatigue, blurred vision, increased hunger, and sores that do not heal.

Positive test results should be confirmed by repeating the fasting plasma glucose test or the oral glucose tolerance test on a different day.

What factors increase patient risk for type 2 diabetes?

- He is 45 or older.
- He is overweight or obese.
- He has a parent, brother, or sister with diabetes.
- He has had gestational diabetes.
- His blood pressure is 140/90 or higher.
- His cholesterol levels are not normal. His HDL cholesterol ("good" cholesterol) is 35 or lower, or his triglyceride level is 250 or higher.
- He is fairly inactive. He exercises fewer than three times a week.

symptoms of hyperglycemia, such as:

- Increased thirst
- Increased urination
- Fatigue
- Blurred vision
- Slow-healing infections

or symptoms of hypoglycemia, such as:

- Sweating
- Hunger
- Trembling
- Anxiety
- Confusion
- Blurred Vision

Some of the other diseases and conditions that can result in elevated glucose levels include:

1- Acromegaly
2- Acute stress (response to trauma, heart attack, and stroke for instance)
3- Chronic renal failure
4- Cushing syndrome
5- Drugs, including: corticosteroids, tricyclic antidepressants, diuretics, epinephrine, estrogens (birth control pills and hormone replacement), lithium,

phenytoin (Dilantin),
salicylates,
6- Excessive food intake
7- Hyperthyroidism
8- Pancreatic cancer
9- Pancreatitis

Low to non-detectible urine glucose results are considered normal. Anything that raises blood glucose levels also has the potential to elevate urine glucose levels. Increased urine glucose levels may be seen with medications, such as estrogens and chloral hydrate, and with some forms of renal disease.

Moderately increased levels may be seen with pre-diabetes. This condition, if left un-addressed, often leads to type 2 diabetes.

Low glucose levels (hypoglycemia) are also seen with:

- Adrenal insufficiency
- Drinking alcohol
- Drugs, such as acetaminophen and anabolic steroids
- Extensive liver disease
- Hypopituitarism
- Hypothyroidism
- Insulin overdose
- Insulinomas (insulin-producing pancreatic tumors)
- Starvation

Treatment :
إتباع نظام غذائى مخصص لمرض السكر

Type 1 (Insulin-dependant diabetes mellitus or juvenile diabetes mellitus) :

Type 1 is the type of diabetes that people most often get before 30 years of age. All people with type 1 diabetes need to take insulin *(IN-suh-lin)* because their bodies do not make enough of it. Insulin helps turn food into energy for the body to work.

1- By trial : start by 10 U. (0.5 cc.) S.C. before each meal , gradually increase by 10 U. every other day until glycosuria is controlled .calculate the total dose given/ day . Give this dose once daily in the morning as : (1/3 Crystalline & 2 /3 protamin zinc insulin) . for example if 60 units of insulin are needed daily to control glycosuria , this amount could be given once as 1 cc. Crystalline insulin (20 U.) + 1 cc. Protamin zinc insulin (40 U.) S.C. 30 min. before breakfast .

OR :

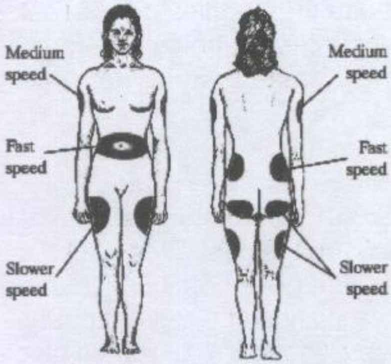
2- Give one unit insulin for each 2 gms of glucose lost in urine . for example , if one loses 120 gms of glucose in urine daily , the required dose of insulin will be 60 units daily .

OR :

3- Give 1/ 4 the fasting blood sugar in units . for example if the fasting blood sugar is 160 , the required dose of insulin will be 40 units daily .

R / Actrapid 20 U / ml vials .
يحقن ثلث الجرعة اليومية تحت الجدل قبل الإفطار يوميا
R / Mixtard 40 U/ml vials :
يحقن ٢/٣ الجرعة اليومية تحت الجلد قبل الإفطار يوميا

These are good places to give insulin shots



Diabetes Treatment: Medications for type 2 diabetes

Healthy lifestyle choices — including diet, exercise and weight control — are an important part of diabetes Treatment. If patient has type 2 diabetes, sometimes medication to control blood sugar is needed, too. Here's a comparison of various types of oral and injectable diabetes medications. Sometimes a single medication is effective. In other cases, a combination of medications works better.

Medication	How it's taken	How it works	Advantages
Alpha-glucosidase inhibitors e.g. Acarbose	By mouth Three times a day, at each meal	Slows absorption of sugar into bloodstream after eating carbohydrates	Limits the rapid rise of blood sugar that can occur after meals; may promote weight loss
Biguanides e.g Metformin (Glucophage)	By mouth Two or three times a day. With meal	Reduces the amount of sugar that liver releases into bloodstream between meals	May promote weight loss; may reduce cholesterol and triglycerides
Meglitinides e.g. Repaglinide - nateglinide	By mouth with each	Stimulates pancreas to release more insulin when	Works quickly when taken with meals; less likely than sulfonylureas to cause low

(Starlix)	meal 1 to 30 minutes before a meal .	blood sugar levels rise after eating	blood sugar
Sulfonylureas e.g. Glipizide - glyburide - glimepiride (Amaryl)	By mouth once daily before breakfast & others taken twice daily	Stimulates pancreas to release more insulin	Combines well with other oral diabetes drugs for maximum effect on blood sugar
Thiazolidinediones e.g. Rosiglitazone (Avandia) - pioglitazone	By mouth	Makes tissues more sensitive to insulin	Taken only once or twice a day with or without food

Sometimes two kinds of medicines are given together. For example, glyburide combined with metformin (brand name: Glucovance), glipizide combined with metformin (brand name: Metaglip) and rosiglitazone combined with metformin (brand name: Avandamet).

الجرعة بالنسبة للأقراص حسب الحالة

In both types , the following is recommended :

* Vitamins : Ampoules or tab. Contain B vitamin . or adenosine triphosphate .

R/ becozym amp.

Or : Neuroton Amp. Or tab.

Or : Neurobion Amp. Or Tab.

Or : neurovit Amp. Or Tab.

Or : Tri-B Amp. Or tab.

Or : Adenoplex Amp.

Or : Epinosine-B forte amp.

الحقن : حقنة بالعضل يوم بعد يوم . الأقراص : قرص ٣ مرات يوميا

عناية مريض السكر بالقدمين

- يتم غسل القدمين يوميا بالماء الدافىء و الصابون مع تجفيفهما جيدا خاصة بين الأصابع ، كما يجب مراعاة اختبار حرارة الماء قبل استخدامها إذ قد تسبب حرقا للجلد.
- يتم فحص القدمين يوميا و خاصة المقدمة ، الجانبين ، الكعب و بين الأصابع و استشارة الطبيب عند ظهور أى تقرحات أو تغيرات أو علامات للتلوث .
- يجب إرتداء جوارب و خاصة فى الطقس البارد تجنبا لحدوث لسعة البرد على أن تكون جوارب نظيفة و تجنب رباطات الجوارب التى تضغط على الساقين و المزودة برباط من أعلاها .

يتم وضع كريم مرطب على القدمين بعد غسلهما إذ أن جلد مريض السكر يكون جافا و قد يتشقق مما قد يؤدى إلى الإصابة بالميكروبات .

كما ينبغى المحافظة على القدمين بإرتداء الحذاء المناسب و المريح أيضا ، و يجب فحص الحذاء من الداخل باستمرار تفاديا لوجود أى شيء بداخله قد يؤذى القدمين و القيام بخلع الحذاء بعد ٥ ساعات من إرتدائه لتغيير نقاط الضغط على القدمين .

عدم المشى بقدمين حافيتين أبدا تجنبا لأية إصابات محتملة .

يتم غمر القدمين بالماء الدافىء قبل قص الأظافر و قصها مستقيمة .

Insulin

Insulin *المستحضرات المحتوية على هرمون الانسولين*

Insulin indicated in ttt of diabetes mellitus
☞Crystalline Insulin used in ttt of diabetic coma due to ketoacidosis through i.v. route . otherwise this indication all types of insulin given subcutenously S.C.

Early Sympotoms of Diabetes Thrist – Exessive urination & in turn Drinking water - weight loss . delay of therapy ⇨ following Complications Ketoacidosis – Retinopathy – Atherosclerosis & Joints inflammations .

Crystalline (Regular Insulin) *الانسولين المائى قصير المفعول*

N.B. preparations named also soluble Insulin, they have-not prolonged duration of action.

Humulin-R 100	10 ml. Vial	Lilly	Neutral Insulin100 i.u./ml.
Insulin Neutral 20	10ml Vials	Novo	1ml. contains 20 i.u.
Actrapid Human 100	10ml. Vial	Novo	100 i.u./ml.
Actrapid Human Penfill 100	5 Penfills	Novo	Human Neutral Insulin 100 i.u./ml.

Mixed Human Insulin Suspension
(Crystalline 30% + ProtamineInsulin 70%)

المستحضرات المحتوية على انسولين مختلط (قصير+طويل المفعول)

Humulin 30/70 Cartridge 100	5 Vials 3ml.	Lilly	100 i.u./ml.
Humulin-N 100	10 ml. Vial	Lilly	100 i.u./ml.
Humulin 30/70 100	10ml Vial	Lilly	100 i.u./ml.
Insulatard Novolet 30/70	5Vials 3ml.	Novo	100 I.U/ml
Insulatard NPH 30/70	10ml.Vial	Novo	
Insulatard Penfill NPH	5Vials	Novo	
Insulin-Mix 40 i.u.	10 ml.Vial	Vacsera	40 i.u./ml.
Insulin-Mix 100 i.u.	10 ml.Vial	Vacsera	100 i.u./ml.
Insulin 40 H.Mix	10ml vial	Sedico	40 i.u./ml.
Insulin 40 H.Bio	10ml vial		40 i.u./ml.
Insulin 40 NPH	10ml vial		40 i.u./ml.
Insulin 100	10ml vial		n100 i.u./ml
Insulin 100	10ml vial		100 i.u./ml
Insulin 100	10ml vial		100 i.u./ml
Lantus 100 IU.	3ml. Cartridge	Aventis	Insulin glargine 100i.u.
Lantus 100 IU.	3ml. X 5 Cartridge	Aventis	
Mixtard 100	10 ml.Vial	Novo	Human Insulin 100
Mixtard 40	10 ml.Vial	Novo	40 i.u./ml.
NovoMix 30 Flexpen NovoMix 30 Penfill	5 ready to use pen X 3ml.	Novo Nordisk	Biphasic insulin aspart 30/70

Oral Hypoglycemic Drugs

These drugs are used in non Insulin dependent diabetes which named Adult-onset diabetes,in those patients the endogenous Insulin is depressed, in this type of diabetes diet modification is considered a treatment .

Sulphonylurea Group

مجموعة السلفونيل يوريا لعلاج مرضى السكر

Glibenclamide منشط لافراز الانسولين - لعلاج مرضى السكر

Dose acc. To blood glucose level - ½ tab. /12 hours – increased gradually tell reach normal blood level – maximum 3 tab. Daiy.

Daonil 5	20 tab.	Aventis	5mg.
Diaben 5	20 tab.	Pharco	5mg.
Euglucon 5	30 tab.	Roche	5mg.
Euglumide 5	30 tab.	ChemiPharm	5 mg.
Glibenase 5	20 tab.	Adco	5mg.
Semi-Daonil 2.5	20 tab.	Aventis	2.5mg.

Glibenclamide + Metformin

منشط لهرمون الانسولين + منشط لحرق الجلوكوز بواسطة الانسجة

Glimet	20 tab.	ChemiPharm /Marcryl	2.5mg+Metformin 400mg.
Glucovance	30 tab.	MinaPharm/ Merck	5mg.+ Metformin 500mg.
Metclamide	30 tabs.	EPCI	2.5mg+Metformin500 mg.
Metclamide		EPCI	5mg.+ Metformin 500mg.

Gliclazide منشط لافراز هرمون الانسولين- لعلاج مرضى السكر

In addition to the antidiabetic effect of Gliclazide it reduces platlets aggreagability and prevent clots formation.

Dose 80-240mg. Daily on divided doses – according To patient blood-glucose level

Diabetron 40	20 tab.	Amoun	40mg.
Diabetron 80	20 tab	Amoun	80mg.
Diabyl 80	20 tab.b.	Memphis	80mg.
Diamicron 80	20 tab.	Servier	80mg.
Diamicron MR 30	30 modfied release tab.	Servier	30mg
Diamicron MR 60	20 modfied release tab.	Servier	60mg
Dianormal 80	20 tab.	Rameda	80mg.
Glipicrone 80	20 tab.	Amriya	80mg.
Semi Glipicron	20 tab.	Amriya	40mg.
Serviclazide 80	10 tab.	Novartis /Sandoz	80mg.
Unocron MR 30	30 tab.	UniPharma /EgyPhar	30mg.

Glimepiride منشط لافراز هرمون الانسولين - لعلاج مرضى السكر

Mechanism 3rd. generations Sulphonylurea class. It lowers blood glucose levels by stimulating the release of insulin from functioning pancreatic beta cells and also by increasing the sensitivity of peripheral tissues to insulin.

Indications Non-Insulin Dependent Diabetes Mellitus (NIDDM) not responding to diet & exercise alone.

2- In combination with insulin in patients whose glucose levels cannot be controlled .

Dose 1-2 mg once daily.
Maintenance dose: 1-4 mg once

Amaryl 1	10 tab.	Aventis	1mg.
Amaryl 2	10 tab.	Aventis	2mg.
Amaryl 3	10 tab.	Aventis	3mg.
Diabeto 2	10 tab.	HiPharm	2mg.
Diabenor 2	10 tab	Pharonia /EGD	2 mg.
Diabenor 3	10 Tab	Pharonia /EGD	3 mg.
Diabride 1	10 tab.	Sedico	1mg.
Dolcyl 1	10 tab.	Mup	1mg.
Dolcyl 2	10 tab.	Mup	2mg.
Dolcyl 3	10 tab.	Mup	3mg.
Glimadel 1	10 tab.	DeltaPharm	1mg.
Glimadel 2	10 tab.	DeltaPharm	2mg.
Glimadel 3	10 tab.	DeltaPharm	3mg.
Glimaryl 1	10 Tab	T3A	1 mg
Glimaryl 2	10 Tab	T3A	2 mg
Glimaryl 3	10 Tab	T3A	3 mg

Pamidine 250	20 tab.	0.75	Kahira	Chlorpropamide 250mg.

Glipizide منشط لافراز هرمون الانسولين - لعلاج مرضى السكر

Minidiab 5	30 tab.	Cid/Pharmacia	Glipizide 5mg.
Glupizide 5	30 tab.	Pharaonia	5mg.
Glipizide 5	20 tab.	Pharco	5mg.

Acarbose اكاربوز – يخفض الجلوكوز فى الدم (العلاج مرضى السكر)

Mechanism Competitive inhibitor of intestinal alpha-glucosidases with maximum specific inhibitory action against sucrase – so prevent carbohydrate breakdowing to glucose so not absorbed to the blood Dose 100-400mg. Daily

Glucobay 50	30 tab.	Cid /Bayer	50mg.
Glucobay 100	30 tab.	Cid /Bayer	100mg.

Pioglitazone بيوجليتازون – منشط لحرق الجلوكوز بواسطة الانسجه

Pioglitazone belong to the new group which named Thiazolidinediones that increase tissue sensitivity to insulin so this group called " insulin sensitizers"

Dose15:45 mg. once daily,can be combined with sulphonyl urea group or metformin

Actozone	10 tab.	Amoun	Pioglitazone 30mg.
Diabetin 15	10 tab.	Uni Pharma	Pioglitazone 15mg.
Diabetin 30	10 tab.		Pioglitazone 30mg.
Ensudyne 15	7 tab.	Mup	Pioglitazone 15mg.
Ensudyne 30	7 tab.	Mup	Pioglitazone 30mg.
Pro Glustin 15	7 tab.	Lilly	Pioglitazone 15mg.
Glustin 30	7 tab.	Lilly	Pioglitazone 30mg.
Hi Glitazone 15	10 tab.	Hi Pharm	Pioglitazone 15mg.
Hi Glitazone 30		Hi Pharm	Pioglitazone 30mg.
PioJet 30	10 tab.	EEP H.Co.	Pioglitazone 30mg.

Rosiglitazone maleate منشط لحرق الجلوكوز بواسطة الانسجه

Improve cell sensitvity to insulin for consumption & burning of glucose. Can be given with or without food.

C/I : patient with heart failure.- safety in pregnancy is unproven.

Dose : 4 mg. once daily – maxiumum daily dose is 8 mg. daily .

Avandia 4	14 tab.	Gsk	4mg.
Diazan	10 tab.	OctoberP	4mg.

		harma /Apex	
Rosilone	20 tab.	OctoberPharma /Apex	4mg.
Rosizone 4	10 tab.	OctoberPharma /Apex	4mg.
Rosidexx 4	10 f.c.tab.	IDI/Sigma	4mg.
Rosidexx 8	10 f.c.tab.	IDI/Sigma	8mg.

Nateglinide *ناتيجلينيد – مخفض لجلوكوز بوالدم*

Starlix Combi	24 tab.+ 24tab	Novartis	24 tab.Nateglinide 120mg.+ 24 tab.Metformin 500mg.
Starlix 120	24 tab.	Novartis	Nateglinide 120mg.

Repaglinide *منشط لافراز هرمون الانسولين – يعطى بعد كل وجبة*

Mechanism short-acting megltinide ⇨ stimulate the pancreas for insulin production – it taken directly after each meal .

Diarol 0.5	20 tab.	Amoun	0.5mg.
Diarol 1	20 tab.	Amoun	1 mg.
Diarol 2	20 tab.	Amoun	2 mg.
Novonorm 0.5	30 tab.	NovoNordisk	0.5mg.
Novonorm 1	30 tab.	NovoNordisk	1 mg.
Novonorm 2	30 tab.	NovoNordisk	2 mg.
Repaglide 0.5	20 tab.	MultiPharma	0.5mg.
Repaglide 1	20 tab.	MultiPharma	1 mg.
Repaglinide 1	30 tab.	Eipico	1 mg.

Other Preparations used for ttt of Diabetics

ادوية اخرى لتخفيض جلوكوز الدم - لعلاج مرضى السكر

Diamol 500	20 tab	ADWIC	Tolbutamide 500mg.
Glurenor 30	20 tab.	Menarini/ MinaPharm	Gliquidone 30mg.
Diavance 2.5	30 tab.	Sigma	Glyburide 2.5mg.+ Metformin hcl 500mg.
Diavance 5	30 tab.	Sigma	Glyburide 5mg.+ Metformin hcl 500mg.

Biguanide Group

Metformin *ميتفورمين - مخفض لجلوكوز الدم*

Mechanism decrease Glucose production from liver & increase consumption of glucose by tissues Metformin is suitable for over weight diabetics , and sulphonylurea resistant diabetics. Also can be combined with Insulin.

Dose : 500 , 850 or 1000mg. once or twice daily

Amophage 500	10 tab.	Amoun	500mg.
Cidophage 500	10 tab.	Cid	500mg.
Cidophage Retard 850	30 tab.	Cid	850mg.
Cidophage Retard 850	60 tab.	Cid	850mg.
Diaformin 500	20 tab.	Pharco	500mg.
Diaphage 500	20 tab.	Pharaonia	500mg.
Diaphage 850	30 tab.	Pharaonia	850mg.
Glucoformin 500	20 tab.	Novartis	500mg.
Glucophage 500	50 tab.	MinaPharm /Merck	500 mg.

Glucophage 1000	30 tab.	MinaPharm /Merck	1000 mg.
Metformin 500	10 tab.	ADWIC	500mg.

Diabetes Insipidus

Despite the name, diabetes insipidus is not related to type 1 or type 2 diabetes. People with diabetes insipidus are thirsty all the time and have to urinate very often. They might wake up 2 or 3 times in the night to urinate.

Causes :

Two things cause diabetes insipidus:-

- A part of the brain (called the hypothalamus) doesn't make enough antidiuretic hormone (called ADH). ADH helps body balance water in the urine and blood.
- the kidneys don't work with this hormone the way they should (nephrogenic diabetes insipidus).

Most people with diabetes insipidus get it after an injury to the head or after brain surgery. Some people with diabetes insipidus have a brain tumor. Sometimes it runs in families. Some medicines, like lithium, can also cause it. About 25% of the time, doctors can't find the cause.

Diagnosis :

- A "water deprivation" test. During this test, Patient is not allowed to drink any liquids. The staff will weigh patient, check her urine and blood every hour for several hours. If the results of the test show that he has diabetes insipidus, he will probably also has pictures taken of her brain with a CT (computed tomographic) scan or an MRI (magnetic resonance image). The scans can show problems in the brain.

Treatment :

- Adequate fluid intake to avoid dehydration .
- Psychotherapy .

One medicine called desmopressin (brand name: Minirin Or DDAVP) can help and it's like body's natural ADH. This medicine comes as nasal spray and other forms. If patient takes Minirin, he shouldn't drink too much, or his body will get overloaded with fluids. Too much fluid in his body and make him feel sick, weak or dizzy.

R / Minirin nasal Spray .
يستنشق ١٠ ميكروجرام بأحد المنخارين مرة واحدة أثناء النهار و أخرى كل مساء

Or : Minirin 0.1 or 0.2 mg tab .
قرص مرتين يوميا

Or : Vasopressin Amp.
٥,٢-٥ وحدات (٥سم مكعب) بالعضل يوميا أو يوم بعد يوم

If diabetes insipidus is caused by kidneys (nephrogenic diabetes insipidus) that don't work well with ADH, then DDAVP won't help. Other medicines, like hydrochlorothiazide (a "water" pill), may help. Water pills help body balance salt and water.

R / Tegratol 200 mg tab.
نصف – ١ قرص مرتين إلى ٣ مرات يوميا
It stimulates release of vasopressin & may lead to haemotological side effects .

Hypoglycemia

Hypoglycemia is a condition characterized by an abnormally low level of blood sugar (glucose), the body's main energy source.

Hypoglycemia is commonly associated with diabetes. However, a wide variety of conditions, many of them rare, can cause low blood sugar in people without diabetes. Like fever, hypoglycemia isn't a disease itself, it's an indicator of a health problem.

In people who don't have diabetes, some underlying causes of hypoglycemia include: certain medications; alcohol; certain cancers; critical illnesses such as kidney, liver or heart failure; hormonal deficiencies; and disorders that result in the body producing too much insulin.

Signs and symptoms

The brain needs a steady supply of glucose, for it neither stores nor manufactures its own energy supply.

Hypoglycemia can have these effects on the brain:

- Confusion, abnormal behavior or both, such as the inability to complete routine tasks
- Visual disturbances, such as double vision and blurred vision
- Seizures, uncommonly
- Loss of consciousness, uncommonly

Hypoglycemia may also cause these other signs and symptoms:

- Heart palpitations
- Tremor
- Anxiety
- Sweating
- Hunger

These signs and symptoms aren't specific to hypoglycemia. There may be other causes. The only way to know for sure that hypoglycemia is the cause is by measuring blood sugar level.

In someone without diabetes, the normal range for a fasting blood sugar level is between 70 and 100 milligrams per deciliter (mg/dL). A low fasting blood sugar for someone without diabetes is defined as a level below 50 mg/dL.

Causes

The list of possible specific causes of hypoglycemia in people without diabetes is lengthy. Causes include the following:

- Mistaken use. Taking someone else's oral diabetes

medication accidentally is a common cause of hypoglycemia.

- Some medications. may cause hypoglycemia, especially in children or in people with kidney failure. e.g. quinine, which is used to treat leg cramps and malaria.

- Alcohol. Excessive alcohol consumption can block the process of glucose production, depleting body's stores of glycogen. This usually only occurs when eating and drinking heavily.

- Some critical illnesses. Severe illnesses of the liver, such as drug-induced hepatitis, can cause hypoglycemia because liver is a key organ in glucose production. The kidney also is an important organ in glucose production, and conditions such as kidney failure affect glucose levels. Long-term starvation, as may occur in the eating disorder anorexia nervosa, can result in the depletion of substances the body needs in gluconeogenesis, causing hypoglycemia.

- Excessive production of insulin: may be caused by a rare disorder of the beta cells in pancreas, e.g a beta cell tumor (insulinoma) .

- Endocrine deficiencies. Certain disorders of the adrenal glands (Addison's disease) and the pituitary gland (hypopituitarism) can result in a deficiency of key hormones that regulate glucose production.

- Other tumors (non-beta-cell tumors). Hypoglycemia may result from tumors other than a beta cell tumor of the pancreas. Some tumors don't cause an overproduction of insulin, but cause excessive utilization of glucose by the tumor or they result in an overproduction of insulin-like substances. Elevated levels of these substances cause hypoglycemia.

Most hypoglycemia occurs in a fasting state, but that's not always the case. Sometimes, hypoglycemia occurs after meals because the body produces more insulin than is needed. This type of hypoglycemia is called reactive or postprandial hypoglycemia.

Screening and Diagnosis

- Documentation of low blood glucose when the signs and symptoms occur. a sample of blood will be drawen to be analyzed in the laboratory.

- Disappearance of the signs and symptoms. The second part of the diagnostic triad involves whether signs and symptoms go away when blood glucose levels are raised.

Treatment

Treatment of the underlying condition that's causing

hypoglycemia, to prevent it from recurring .

R / **Oral glucose** (If the patient is conscious & co-operative to swallow)
Or : **Dextrose 5 % solution** (If the patient is unable to swallow)
٥٠ سم مكعب بالوريد تكرر عند الحاجة
Or : **Glucagon injection** .
١ مجم بالعضل

+ <u>In prolonged hypoglycemia</u> :
R / **Fortecortin 8 mg Amp.**
Or : **Decadron 8 mg amp.**
حقنة بالوريد

Addison's disease

Addison's disease is a disorder that results in the body producing insufficient amounts of certain hormones produced by adrenal glands.

Adrenal glands are located just above each of the two kidneys. These glands are part of the endocrine system, and they produce hormones that give instructions to virtually every organ and tissue in the body.

In Addison's disease, the adrenal glands produce too little cortisol, which is one of the hormones in a group called the glucocorticoids. Sometimes, Addison's disease also involves insufficient production of aldosterone, one of the mineralocorticoid hormones. Addison's disease can be life-threatening.

Also called adrenal insufficiency or hypocortisolism, Addison's disease can occur at any age, but is most common in people ages 30 to 50. Treatment for Addison's disease involves taking hormones to replace the insufficient amounts being made by the adrenal glands.

Signs and symptoms

- Muscle weakness and fatigue
- Weight loss and decreased appetite
- Darkening of skin (hyperpigmentation)
- Low blood pressure, even fainting
- Salt craving
- Low blood sugar (hypoglycemia)
- Nausea, diarrhea or vomiting
- Irritability
- Depression

Sometimes, however, the signs and symptoms of Addison's disease may appear suddenly. In acute adrenal failure (addisonian crisis), the signs and symptoms may also include:

- Pain in lower back, abdomen or legs
- Severe vomiting and diarrhea, leading to dehydration
- Low blood pressure
- Loss of consciousness

Causes

The adrenal glands are composed of two sections :-
1- The interior (medulla) produces adrenaline-like hormones.
2- The outer layer (cortex) produces a group of hormones called corticosteroids, which include

glucocorticoids, mineralocorticoids and male sex hormones (androgens).

Some of the hormones the cortex produces are essential for life — the glucocorticoids and the mineralocorticoids.

- Glucocorticoids. These hormones influence body's ability to convert food fuels into energy, play a role in immune system's inflammatory response, and help the body respond to stress.
- Mineralocorticoids. These hormones maintain body's balance of sodium and potassium and water to keep blood pressure normal.

Primary adrenal insufficiency
Addison's disease occurs when the cortex is damaged and doesn't produce its hormones in adequate quantities. Doctors refer to the condition involving damage to the adrenal glands as primary adrenal insufficiency.

The failure of adrenal glands to produce adrenocortical hormones is most commonly the result of the body attacking itself (autoimmune disease). For unknown reasons, immune system views the adrenal cortex as foreign something to attack and destroy.

Other causes of adrenal gland failure may include:

- Tuberculosis
- Other infections of the adrenal glands
- Spread of cancer to the adrenal glands
- Bleeding into the adrenal glands

Secondary adrenal insufficiency
Adrenal insufficiency can also occur if pituitary gland is diseased. The pituitary gland makes a hormone called adrenocorticotropic hormone (ACTH), which stimulates the adrenal cortex to produce its hormones. Inadequate production of ACTH can lead to insufficient production of hormones normally produced by adrenal glands, even though adrenal glands aren't damaged. Doctors call this condition secondary adrenal insufficiency.

Another more common possible cause of secondary adrenal insufficiency occurs when people who take corticosteroids for Treatment of chronic conditions, such as asthma or arthritis, abruptly stop taking the corticosteroids.

Addisonian crisis

If patien has untreated Addison's disease, an addisonian crisis may be provoked by physical stress, such as an injury, infection or illness.

Screening and **Diagnosis**

- Blood test. Measuring blood levels of sodium, potassium, cortisol and ACTH . A blood test can also measure antibodies associated with autoimmune Addison's disease.

- ACTH stimulation test. This test involves measuring the level of cortisol in blood before and after an injection of synthetic ACTH. ACTH signals adrenal glands to produce cortisol. If adrenal glands are damaged, the ACTH stimulation test shows that output of cortisol in response to synthetic ACTH is blunted or nonexistent.

- Insulin-induced hypoglycemia test. Occasionally, doctors suggest this test if pituitary disease is a possible cause of adrenal insufficiency (secondary adrenal insufficiency). The test involves checking blood sugar (blood glucose) and cortisol levels at various intervals after an injection of insulin. In healthy people, glucose levels fall and cortisol levels increase.

- Imaging tests. a computerized tomography (CT) scan of abdomen to check the size of adrenal glands and looking for other abnormalities that may give insight to the cause of the adrenal insufficiency. a CT scan or magnetic resonance imaging scan of pituitary gland may be suggested if testing indicates patient has secondary adrenal insufficiency.

Management of Addisonian crisis

An addisonian crisis is a life-threatening situation that results in low blood pressure, low blood levels of sugar and high blood levels of potassium. This situation requires immediate medical care. Treatment typically includes intravenous injections of:

- Hydrocortisone
- Saline solution
- Sugar (dextrose)

R / **Dextrose 5 % in normal saline solution** . First given fairly rapidly .

R / **Solu-cortef (hydrocortisone) 100 mg.** ٢٠٠ مجم حقن بالوريد ثم ١٠٠ مجم فى محلول الجلوكوز بالتنقيط كل ٨ ساعات

R/ **Astonin-H tab.**
١-٢ قرص كل ٦ ساعات

- Treatment of precipitating factors e.g. infection .
- Complete bed rest .
- Monitoring of hypotension & hypoglycemia .

Cushing's syndrome
(Hypercortisolism)

Definition

Cushing's syndrome is a disease caused by increased production of cortisol, or by excessive use of cortisol or other steroid hormones.

Causes, incidence, and risk factors

Cushing's syndrome is a condition that results from an excess of cortisol, a hormone produced by the adrenal glands. The most common cause of Cushing's syndrome is Cushing's disease, caused by excessive production of the hormone ACTH by the pituitary gland. ACTH stimulates the adrenal glands to produce cortisol.

Cushing's syndrome can be caused by a tumor of the pituitary gland, a tumor of the adrenal gland, a tumor somewhere other than the pituitary or adrenal glands (ectopic Cushing's syndrome), or by long-term use of corticosteroids (drugs commonly used to treat conditions such as rheumatoid arthritis and asthma).

Risk factors for Cushing's syndrome are adrenal or pituitary tumors, long-term therapy with corticosteroids, and being female.

Symptoms

- Moon face (round, red, and full)
- Buffalo hump (a collection of fat between the shoulders)
- Central obesity with protruding abdomen and thin extremities .
- Weight gain (unintentional)
- Weakness
- Backache
- Headache
- Acne or superficial skin infections
- Thin skin with easy bruising
- Thirst
- Increased urination
- Purple striations on the skin of the abdomen, thighs, and breasts
- Mental changes
- Impotence or cessation of menses
- Facial hair growth

Additional symptoms that may be associated with this disease:

- Skin spots, red
- Skin blushing / flushing
- Muscle atrophy
- Fatigue
- Bone pain or tenderness
- High blood pressure
- Low S. Potassium & Chloride .

Signs and tests

Tests to confirm high cortisol level:

- Cortisol, urine
- Dexamethasone suppression test (Faliure of suppression of cortisol secretion by exogenous dexamethasone) .
- Serial serum cortisol levels

Tests to determine the cause:

- ACTH
- Cranial MRI or cranial CT scan may show pituitary tumor
- Abdominal CT may show adrenal mass

General findings:

- Glucose test is elevated
- Potassium test may be low

- White blood cell count may be elevated

Treatment

R / Potassium Syrup.
Or : Slow K tab.
قرص أو ملعقة ٣ مرات يوميا

Notes :
Treatment depends upon the cause of the disorder.

- In Cushing's syndrome caused by drug therapy with corticosteroids, the drug dose must be slowly decreased under medical supervision.

- In Cushing's disease caused by a pituitary tumor, surgery to remove the tumor is recommended. Radiation is sometimes needed as well. Hydrocortisone (cortisol) replacement therapy is needed after surgery. In some cases, life-long cortisol-replacement therapy becomes necessary.

- Cushing's syndrome caused by an adrenal tumor is usually treated by surgical removal of the tumor. If the tumor cannot be removed, certain medications can suppress the secretion of cortisol.

- In Cushing's syndrome caused by a tumor secreting ACTH, removal of the tumor is the best way to treat the Cushing's syndrome. Cortisol replacement therapy is needed after surgery until cortisol production resumes. In some cases, life-long therapy with cortisone drugs becomes necessary.

Goiter

Definition A goiter is an enlargement of the thyroid gland. It is not cancer.

Causes, incidence, and risk factors

There are different kinds of goiters. A simple goiter usually occurs when the thyroid gland is not able to produce enough thyroid hormone to meet the body's needs. The thyroid gland makes up for this lack by enlarging, which usually overcomes mild deficiencies of thyroid hormone.

A simple goiter may be classified as either an endemic (colloid) goiter or a sporadic (nontoxic) goiter.

Endemic goiters occur within groups of people living in geographical areas with iodine-depleted soil, usually regions away from the sea coast ساحل البحر. People in these communities might not get enough iodine in their diet (iodine is vital to the formation of thyroid hormone). The modern use of iodized table salt in the U.S. prevents this deficiency. However, inadequate iodine is still common in central Asia and central Africa.

In most cases of sporadic goiter the cause is unknown. Occasionally, certain medications such as lithium or aminoglutethimide can cause a nontoxic goiter.

Hereditary factors may cause goiters. Risk factors for the development of a goiter include female sex, age over 40 years, inadequate dietary intake of iodine, residence in an endemic area, and a family history of goiter.

Symptoms

- Thyroid enlargement varying from a single small nodule to massive enlargement (neck lump)
- Breathing difficulties, cough, or wheezing due to compression of the windpipe
- Swallowing difficulties due to compression of the esophagus
- Neck vein distention and dizziness when the arms are raised above the head

Signs and tests

- Measurement of thyroid stimulating hormone (TSH) and free thyroxine (T4) in the blood
- Thyroid scan and uptake
- Ultrasound of thyroid -- if nodules are present, a biopsy should be done to check for thyroid cancer

Treatment

R / Eltroxin 50 mcg tab. ١-٢ قرص
قبل الإفطار يوميا و يمكن زيادتها إلى ٣-٦ أقراص
حسب الحالة و يستمر العلاج لمدة ٦ أشهر

A goiter only needs to be treated if it is causing symptoms. The enlarged thyroid can be treated with radioactive iodine to shrink the gland or with surgical removal of part or all of the gland (thyroidectomy).

- Small doses of iodine (Lugol's or potassium iodine solution) may help when the goiter is due to iodine deficiency.

R / Lugol's iodine solution .

٥ نقط على نصف كوب ماء يوميا حتى تعود الغدة
إلى حجمها الطبيعى ثم ينصح بإستخدام ملح غنى
باليود

Pituitary dwarfism
(Panhypopituitarism)

Definition Pituitary dwarfism or may called Growth hormone deficiency involves abnormally short stature قصير القامة with normal body proportions. Growth hormone deficiency can be categorized as either congenital (present at birth) or acquired.

Causes, incidence, and risk factors

An abnormally short height in childhood may occur if the pituitary gland does not produce enough growth hormone. It can be caused by a variety of genetic mutations (such as Pit-1 gene, Prop-1 gene, growth hormone receptor gene, growth hormone gene), absence of the pituitary gland, or severe brain injury, but in most cases no underlying cause of the deficiency is found.

Growth retardation may become evident in infancy and persist throughout childhood. The child's

"growth curve," which is usually plotted on a standardized growth chart by the pediatrician, may range from flat (no growth) to very shallow (minimal growth). Normal puberty may or may not occur, depending on the degree to which the pituitary can produce adequate hormone levels other than growth hormone.

Growth hormone deficiency may be associated with deficiencies of other hormones, including the following:

- Thyrotropins (control production of thyroid hormones)
- Vasopressin (controls water balance in the body)
- Gonadotropins (control production of male and female sex hormones)
- ACTH or adrenocorticotrophic hormone (controls the adrenal gland and its production of cortisol, DHEA, and other hormones)

Physical defects of the face and skull can also be associated with abnormalities of the pituitary or pituitary function. A small percentage of infants with cleft lip and cleft palate have decreased growth hormone levels.

Symptoms

- Slowed or absent increase in height
- Slow growth before age 5
- Short stature -- below 5th percentile on a standardized growth chart, an adult less than 5 feet tall
- Absent or delayed sexual development in an adolescent
- Headaches
- Excessive thirst with excessive urination
- Increased urine volume

Signs and tests

A physical examination including weight, height, and body proportions will show signs of slowed growth rate and deviation from normal growth curves.

Tests may include the following:

- Hand x-ray can determine bone age.
- DEXA (Dual Energy X-ray Absorptiometry) can also determine bone age.
- Measurement of growth hormone and associated binding protein levels (IGF-I and IGFBP-3) reveals if the growth problem is caused by dysfunction of the pituitary gland.
- Tests to measure other hormone levels (lack of growth hormone may not be an isolated problem).
- X-ray of head may show problems with the skull, such as small, enlarged, or empty sella or a space-occupying lesion.
- MRI of the head can show the hypothalamus and pituitary glands.

Treatment

R / Genotropin (somatropin) vial .
5,0 - 7,0 وحدة / كجم / اسبوعيا

- Treatment should be continued for several years until closure of epiphyses occurs .

Acromegaly & Gigantism

Acromegaly is an uncommon hormonal disorder that develops when pituitary gland produces too much growth hormone during adulthood. When this happens, bones increase in size, including those of hands, feet and face. The term "acromegaly" is derived from the Greek words for extremities and enlargement. Acromegaly usually affects middle-aged adults.

In children who are still growing, too much growth hormone can cause a condition called gigantism. These children have exaggerated bone growth and an abnormal increase in height.



Signs and symptoms

One of the most common signs of acromegaly is enlarged hands and feet , gradual changes in the shape of face, such as a protruding lower jaw and brow, an enlarged nose, thickened lips, and wider spacing between teeth.

In addition to enlarged hands and feet and facial changes, acromegaly may also produce the following signs and symptoms, which can vary from one person to another:

- Coarse, oily, thickened skin
- Excessive sweating and body odor
- Small outgrowths of skin tissue (skin tags)
- Fatigue and muscle weakness
- A deepened, husky voice due to enlarged vocal cords and sinuses
- Severe snoring due to obstruction of the upper airway
- Impaired vision
- Headaches
- Enlarged tongue
- Pain and limited joint mobility
- Menstrual cycle irregularities in women
- Erectile dysfunction in men
- Enlarged liver, heart, kidneys, spleen and other organs
- Increased chest size (barrel chest)

Causes

The pituitary, a small gland located at the base of brain behind the bridge of nose, produces a number of hormones. One hormone, called growth hormone (GH), plays an important role in managing physical growth.

When GH is secreted into bloodstream, it triggers liver to produce a hormone called insulin-like growth factor-I (IGF-I). In turn, IGF-I stimulates the growth of bones and other tissues. If pituitary gland makes too much GH, excessive amounts of IGF-I can result. Too much IGF-I can cause abnormal growth of soft tissues and skeleton and other signs and symptoms characteristic of acromegaly and gigantism.

In adults, a tumor is the most common cause of too much GH production:

- Pituitary tumors. Most cases of acromegaly are caused by a noncancerous (benign) tumor (adenoma) of the pituitary gland. The tumor secretes excessive amounts of growth hormone causing many of the signs and symptoms of acromegaly. Some of the symptoms of acromegaly, such as headaches and impaired vision, are due to the tumor mass pressing on nearby brain tissues.

- Nonpituitary tumors. In a few people with acromegaly, tumors in other parts of the body, such as the lungs, pancreas or adrenal glands, cause the disorder. Sometimes, these tumors actually secrete GH. In other cases, the tumors produce a hormone called growth hormone-releasing hormone (GH-RH), which stimulates the pituitary to make more GH.

Screening and **Diagnosis**

- GH and IGF-I measurement. After fasting overnight, doctor will take a blood sample to measure levels of GH and IGF-I. Elevated levels of these hormones suggest acromegaly.

- Growth hormone suppression test. This is the definitive method for verifying acromegaly. In this test, blood levels of GH are measured before and after drinking a preparation of glucose (sugar). Normally, glucose ingestion depresses levels of GH. If patient has acromegaly, his GH level will tend to stay high.

- Imaging. such as a computerized tomography (CT) scan or magnetic resonance imaging (MRI) scan — to help pinpoint the location and size of a tumor of pituitary gland. If radiologists, who usually perform the procedures, see no tumor of pituitary, they may look for nonpituitary tumors that might be responsible for high levels of GH.

Treatment

Treatment focuses on lowering production of GH, as well as reducing the negative effects of the tumor on the pituitary and surrounding tissues.

Surgery

Doctors can remove most pituitary tumors using a method called transsphenoidal surgery.

Removing the tumor can normalize GH production . In some cases, surgeon may not be able to remove the entire tumor. This may result in persistently elevated GH levels after surgery, requiring further medical or radiation Treatments.

Medications

Drugs used to lower the production or block the action of GH include:

- Synthetic hormones. The drug octreotide (Sandostatin, Sandostatin LAR)is a synthetic version of the brain hormone

somatostatin. It can interfere with the excessive secretion of GH by the pituitary, and thus can produce rapid declines in GH levels. When starting octreotide Treatment, you initially inject patient with a short-acting preparation under skin (subcutaneously) three times a day to determine if he has any side effects from the medication and if it's effective. Then, if it's tolerated and effective, patient can takes a long-acting form that requires an injection into the muscles of buttocks (gluteal muscles), administered once a month.

- Dopamine agonists. they can lower levels of GH and IGF-I. The tumor may decrease in size in some people taking dopamine agonists or octreotide.

R / Parlodel (Bromocriptine) tab.
٢٠ – ٣٠ مجم فى جرعات مقسمة

Or : Lactodel 2.5 mg tab.
Or : Dopagon 2.5 mg tab.

- Radiation
doctors may recommend radiation Treatment when tumor cells remain after surgery. Radiation therapy destroys any lingering tumor cells and reduces GH levels.

Thyroid Disease

Understanding the thyroid

The thyroid is a small gland, shaped like a butterfly, that rests in the middle of the lower neck. Its primary function is to control the body's metabolism (rate at which cells perform duties essential to living). To control metabolism, the thyroid produces hormones, T4 and T3, which tell the body's cells how much energy to use.

A properly functioning thyroid will maintain the right amount of hormones needed to keep the body's metabolism functioning at a satisfactory rate. As the hormones are used, the thyroid creates replacements. The quantity of thyroid hormones in the bloodstream is monitored and controlled by the pituitary gland. When the pituitary gland, which is located in the center of the skull below the brain, senses either a lack of thyroid hormones or a high level of thyroid hormones, it will adjust its own hormone (TSH) and send it to the thyroid to tell it what to do.

What is thyroid disease and whom does it affect?

When the thyroid produces too much hormone, the body uses energy faster than it should. This condition is called hyperthyroidism. When the thyroid doesn't produce enough hormone, the body uses energy slower than it should. This condition is called hypothyroidism.

Hypothyroidism (Myxedema)

Definition Hypothyroidism is a condition in which the thyroid gland fails to produce enough thyroid

hormone.

Causes, incidence, and risk factors

The thyroid gland, located in the front of the neck just below the larynx, secretes hormones that control metabolism These hormones are thyroxine (T4) and triiodothyronine (T3).

The secretion of T3 and T4 is controlled by the pituitary gland and the hypothalamus, which is part of the brain. Thyroid disorders may result not only from defects in the thyroid gland itself, but also from abnormalities of the pituitary or hypothalamus.

Hypothyroidism, or underactivity of the thyroid gland, may cause a variety of symptoms and may affect all body functions. The body's normal rate of functioning slows, causing mental and physical sluggishness. The symptoms may vary from mild to severe. The most severe form, called myxedema coma, is a medical emergency.

The following conditions cause hypothyroidism:

- Thyroiditis is an inflammation of the thyroid gland. This can lower the amount of hormones produced.
- Hashimoto's thyroiditis is a painless disease of the immune system that is hereditary.
- Postpartum thyroiditis occurs in 5 percent to 9 percent of women after giving birth. It is usually a temporary condition.
- Iodine deficiency Iodine is used by the thyroid to produce hormones. Iodine deficiency has been virtually wiped out by the use of iodized salt.
- A non-functioning thyroid gland affects one in 4,000 newborns. If the problem isn't corrected, the child will be physically and mentally retarded.

Symptoms

Early symptoms:

1- kness
2- Fatigue
3- Cold intolerance
4- Constipation
5- Weight gain (unintentional)
6- Depression
7- Joint or muscle pain
8- Thin, brittle fingernails
9- Thin and brittle hair
10- Paleness

Late symptoms:

1- w speech
2- Dry flaky skin
3- Thickening of the skin
4- Puffy face, hands and feet
5- Decreased taste and smell
6- Thinning of eyebrows
7- Hoarseness
8- Abnormal menstrual periods

Additional symptoms that may be associated with this disease:

- Overall swelling
- Muscle spasms (cramps)

- Muscle pain
- Muscle atrophy
- Uncoordinated movement
- Absent menstruation
- Joint stiffness
- Dry hair
- Hair loss
- Drowsiness
- Appetite loss
- Ankle, feet, and leg swelling
- Short stature
- Separated sutures
- Delayed formation or absence of teeth

Signs and tests

A physical examination reveals delayed relaxation of muscles during tests of reflexes. Other findings may include pale, yellow skin, thin and brittle hair, coarse facial features, brittle nails, firm swelling of the arms and legs, and mental slowing. Vital signs may show slow heart rate, low blood pressure, and low temperature.

A chest x-ray may show an enlarged heart.

Laboratory tests to determine thyroid function include:

- T4 test (low)
- Serum TSH (high in primary hypothyroidism, low or low-normal in secondary hypothyroidism)

Additional laboratory abnormalities may include:

- Increased cholesterol levels
- Increased liver enzymes
- Increased serum prolactin
- Low serum sodium
- A complete blood count (CBC) that shows anemia

Treatment

Hypothyroidism is treated with a drug called levothyroxine. This is a synthetic hormone tablet that replaces missing thyroid hormone in the body.

R / Eltroxin 50 mcg tab. ١-٢ قرص قبل الإفطار يوميا تزداد تدريجيا كل ٤ أسابيع

R / Thergran tab. قرص واحد يوميا

Myxedema Coma

Myxedema coma is a medical emergency that occurs when the body's level of thyroid hormones becomes extremely low. It is treated with intravenous thyroid hormones replacement and steroid therapy. Supportive therapy (oxygen, assisted ventilation, fluid replacement) and intensive-care nursing may be indicated.

Hyperthyroidism (Thyrotoxicosis)

Definition Hyperthyroidism is a condition caused by an overactive thyroid gland. The gland makes too much T4 and T3 hormones. Hormones are substances that affect and control many important functions in the body.

Causes, incidence, and risk factors

The thyroid gland is located in the neck. It produces several hormones which control the way that every cell

in the body uses energy (metabolism). The thyroid is part of the endocrine system.
Hyperthyroidism or thyrotoxicosis occurs when the thyroid releases too many of its hormones over a short (acute) or long (chronic) period of time. Many diseases and conditions can cause this problem, including:

- Graves disease
- Non-cancerous growths of the thyroid gland or pituitary gland
- Tumors of the testes or ovaries
- Inflammation (irritation and swelling) of the thyroid due to viral infections or other causes
- Ingestion (taking in through the mouth, such as in eating) of large amounts of thyroid hormone
- Ingestion of excessive iodine

Graves disease accounts for 85% of all cases of hyperthyroidism.

Symptoms

- Weight loss
- Increased appetite
- Nervousness
- Restlessness
- Heat intolerance
- Increased sweating
- Fatigue
- Frequent bowel movements
- Menstrual irregularities in women
- Goiter (visibly enlarged thyroid) may be present

Additional symptoms that may be associated with this disease:

- Weakness
- Sleeping difficulty
- Clammy skin
- Skin blushing or flushing
- Bounding pulse
- Nausea and vomiting
- Lack of menstruation
- Itching - overall
- Heartbeat sensations
- Hand tremor
- Hair loss
- Diarrhea
- Breast development in men
- High blood pressure
- Protruding eyes (exophthalmos)

Signs and tests

Physical examination may reveal thyroid enlargement or goiter. Vital signs (temperature, pulse, rate of breathing, blood pressure) show increased heart rate. Systolic blood pressure (the first number in a blood pressure reading) may be high.

Laboratory tests that evaluate thyroid function:

- Serum TSH is usually low
- T3 and free T4 are usually high

This disease may also alter the results of the following tests:

- Vitamin B-12
- TSI
- Triglycerides
- RT3U
- Radioactive iodine uptake
- Glucose test
- Cholesterol test
- Antithyroglobulin antibody

Treatment Hyperthyroidism is usually treated with

- Antithyroid medications :

R / Neomercazol 5 mg tab.
Or : Carbimazol 5 mg tab.

٣قرص بعد الأكل ٣ مرات يوميا حتى تختفى الأعراض (٣-٤ أسابيع) و بعد ذلك قرص ٣ مرات يوميا يوميا لمدة سنتين .

- Beta-blockers like propranolol are used to treat some of the symptoms including rapid heart rate, sweating, and anxiety until the hyperthyroidism can be controlled.

R / Indral (propranolol) 40 mg tab.
قرص قبل الأكل ٣ مرات يوميا

- Sedative :

R / Calmepam 1.5 or 3 mg tab.
قرص عند اللزوم

-Vitamin :

R / Becozyme amp.
Or : Viterra Cap.
أمبول بالعضل كل ٣ أيام أوكبسول مرتين يوميا

-Radioactive iodine (which destroys the thyroid and stops the excess production of hormones) is indicated in patients above 40 years .

- Subtotal thyroidectomy : Surgery to remove the thyroid. Is indicated in:

+ Retrosternal goitre .

+ Secondary thyrotoxicosis .

+ Failure or recurrence after medical treatment .

N.B. If the thyroid must be removed with radiation or surgery, replacement thyroid hormones must be taken for the rest of the person's life.

Pre-operative preperation :

R / Neomercazol tab.
Or : carbimazole tab.
٢ قرص كل ٨ ساعات

R / Lugol's iodine solution .
٥-١٠ نقط على نصف كوب ماء يوميا

R / Calmepam 3 mg tab.
نصف – قرص ٣ مرات يوميا

- Treatment of Protruding eyes (exophthalmos) :

R / Eltroxin 50 mg tab.
قرص ٣ مرات يوميا

R / Deltacortril tab. قرصان بعد الأكل ٤ مرات يوميا يوميا لمدة أسبوع ثم تخفض الجرعة تدريجيا بمعدل ١-٢ قرص كل أسبوع

Or : Synacthen –deopt amp.
حقنة بالعضل يوميا

Chapter – 14
Genito-urinary pathologies

Renal colic

Treatment :

R / Voltaren Amp. حقنة بالعضل عند اللزوم
or : Buscopan Amp.
حقنة بالعضل أو الوريد ببطء عند اللزوم
Or : Glucolynamine amp.
حقنة بالوريد ببطء عند اللزوم

+ R / Rowatinex cap.
Or : Spasmopyralgin tab.
Or : Urinex cap.
كبسولة أو قرص ٣ مرات يوميا

OR / Spasmo-rowatinex Supp.
لبوسة كل ١٢ ساعة

+ R / uricol eff .
فوار على نصف كوب ماء ٣ مرات يوميا

N.B : Exclude other causes of colic (e.g. appendicitis) must be done first .

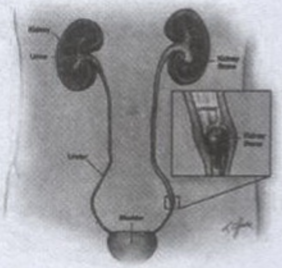
Urinary Stones (Caliculi)

What is a kidney stone?

A kidney stone, or "urinary stone," develops when crystals from salt and mineral substances form in the urine. These crystals can combine and grow to form a stone.

The stones can range in size from a grain of salt to a golf ball, or even larger. Some stones may move to other parts of the urinary system, including the bladder and the ureter (the vessel that transports urine from the kidney to the bladder).

Symptoms



The most common symptoms of kidney stones are blood in the urine and pain. The stone can cause pain once it passes into the ureter. Typically, the pain starts in the back by the rib cage and travels around to the side as the stone moves. It may also radiate (spread out) into the groin.

Other symptoms include:

- Feeling the need to urinate often
- Inability to urinate (because a stone is blocking the urinary tract)
- Nausea
- Vomiting

Rarely, a stone can cause an infection in the urine by blocking its flow. Cloudy, foul-smelling urine, fever, chills, or weakness

may be signs of a serious infection.

Diagnosis

A urinalysis (analysis of a small sample of urine for infection and blood) and a 24-hour urine collection (to look for substances associated with kidney stones) may also be performed. The urine is collected and strained, and any stones found in the urine are analyzed to determine their chemical composition.

Abdominal X-ray, ultrasound, intravenous pyelography (IVP), or computed tomography (CT) scan. In IVP, patient receives an injection of dye before the X-ray is taken. The dye is used to get a better image of the size and location of the kidney stone.

Treatment :

- شرب المياه بكثرة .
- الحد من تناول الكالسيوم و الأطعمة التى تحتوى على أملاح .

For pain & colic :

R / **Buscopan amp.**
حقنة بالعضل عن اللزوم
Or : **Rowatinex Cap.**
Or :**Spasmopyralgin Tab.**
Or : **petro Tab.**
Or : **Urinex cap.**
قرص أو كبسولة ٣ مرات يوميا

For expelling small stones :

R / Proximol Tab. قرص ٣ مرات يوميا
Or : Coli-urinal eff .
Or : urosolvine eff .
ملعقة أو كيس على نصف كوب ماء بعد الأكل ٣مرات يوميا

R / **Cystone tab.** ٢ قرص ٢-٣ مرات يوميا يساعد على طرد الحصوات الصغيرة
Or : **Khellalgine Amp.**
أمبول بالوريد ببطء عند اللزوم

N.B. : Large size urinary stones removed surgically or via laser procedure .

The procedures for removing kidney stones include the following:

- Extracorporeal shock wave lithotripsy (ESWL) تفتيت الحصوة

  ESWL (extracorporeal means "outside the body") is a procedure that uses shock waves to smash the kidney stone into tiny pieces that can pass from the body. It is usually used for smaller stones. In ESWL, the patient is placed in a large tub of water. The urologist locates the kidney stone with an X-ray or ultrasound. Shock waves are generated and travel through the water to the kidney area and crush the stone.

  ESWL is performed on an outpatient basis and the patient can go home a few hours after the procedure. Side effects include blood in the urine for a few days and bruising in the back (caused by the shock waves).

- Percutaneous nephrolithotomy

  This is more of a surgical procedure and is intended for

larger kidney stones. The urologist makes an incision in the patient's back and inserts an instrument called a nephroscope into the kidney to remove the stone. In some cases, the urologist may need to use ultrasound to break a larger stone into smaller pieces. Following the procedure, the patient remains in the hospital for a few days.

- Ureteroscopy
  This procedure is performed when the stone is located in the ureter. The urologist slips an instrument called a ureteroscope through the urethra (the tube through which the urine passes) into the bladder and up to the ureter. The urologist can then remove the stone with a device that resembles a cage or use ultrasound shock waves to pulverize the stone.

Oxalate stones

Treatment:

- تجنب الأطعمة التى تحتوى على أملاح أوكسالات مثل الطماطم و المانجو و الجوافة و غيرها

R/ Epimag Eff . sachets .
Or : Citrocid mag. Plus eff. Sachets .
كيس على نصف كوب ماء ٣ مرات يوميا

N.B. These eff . drugs contains magnesium citrate which react with the accumulated calcium oxalate insoluble salt forming the soluble salt magnesium oxalate which passes easily with urine .

Cystitis

Signs and symptoms

- Most people with bladder infections develop signs and symptoms. These may include:
- A strong, persistent urge to urinate
- A burning sensation when urinating
- Passing frequent, small amounts of urine
- Blood in the urine (hematuria)
- Passing cloudy or strong-smelling urine
- A feeling of pressure in the lower abdomen
- Low-grade fever
- In young children, new episodes of bed-wetting (enuresis) may also be a sign of a UTI.

Complications

An untreated bladder infection can lead to potentially serious complications, such as a kidney infection (pyelonephritis), which could be associated with a bacterial bloodstream infection (bacteremia). Also, kidney infections may permanently damage kidneys. Young children and older adults are at the greatest risk of kidney damage due to bladder infections, because their symptoms are often overlooked or mistaken for other conditions.

Treatment

- شرب المياه بكثرة .

R / Ciprobay 500 , 750 mg
(Ciprofloxacin) tab.
Or : Tarivid 200mg. (ofloxacin)
Tab.
Or : Septrin Ds (Trimethoprim-sulfamethoxazole) Tab.

قرص كل ١٢ ساعة لمدة ٥ أيام

R / Urinex Cap.
كبسولة ٣ مرات يوميا

- عمل مزرعة للبول لمعرفة نوع المضاد الحيوى المناسب لقتل الميكروب .

Erectile dysfunction (Psychogenic impotence)

Signs and symptoms

Patterns of erectile dysfunction include:

- Occasional inability to obtain a full erection
- Inability to maintain an erection throughout intercourse
- Complete inability to achieve an erection

Causes

The penis contains two cylindrical, sponge-like structures that run along its length, parallel to the tube that carries semen and urine (urethra). When a man becomes sexually aroused, nerve impulses cause the blood flow to the cylinders to increase about seven times the normal amount. This sudden influx of blood expands the sponge-like structures and produces an erection by straightening and stiffening the penis. Continued sexual arousal or excitation maintains the higher rate of blood flow, keeping the erection firm. After ejaculation, or when the sexual excitation passes, the excess blood drains out of the spongy tissue, and the penis returns to its nonerect size and shape.

Specific steps take place to produce and sustain an erection:

- Arousal. The first step is sexual arousal, which men obtain from the senses of sight, touch, hearing and smell, and from thoughts.
- Nervous system response. The brain communicates the sexual excitation to the body's nervous system, which activates increased blood flow to the penis.
- Blood vessel response. A relaxing action occurs in the blood vessels that supply the penis, allowing more blood to flow into the shafts that produce the erection.

If something affects any of these factors or the delicate balance among them, erectile dysfunction can result.

Nonphysical causes

Nonphysical causes may account for impotence. They may include:

- Psychological problems. stress, anxiety and fatigue.

Impotence is also an occasional side effect of psychological problems such as depression.

- Negative feelings. Feelings that patient expresses toward his sexual partner — or that are expressed by his sexual partner — such as resentment الإستياء, hostility العداوة or lack of interest also can be a factor in erectile dysfunction.

Physical causes:

- Nerve damage that control erections from longstanding diabetes (diabetic neuropathy)
- Cardiovascular disorders affecting the blood supply to the pelvis e.g. atherosclerosis (accumulation of deposits (plaques) in arteries that supply the penis with blood .
- Certain prescription medications
- Operations for cancer of the prostate
- Fractures that injure the spinal cord
- Multiple sclerosis
- Hormonal disorders : low levels of the hormone testosterone (male hypogonadism).
- Alcoholism and other forms of drug abuse

Screening and **Diagnosis**

More specialized tests may include:

- Ultrasonography. This test can determine the adequacy of arterial circulation in genital organs. Ultrasonography involves using a wand-like device (transducer) held over the blood vessels that supply the penis. The transducer emits sound waves that pass through body tissues and reflect back, producing an image to let doctor see if blood flow is impaired. The test often is done before and after injection of medication to see if there's an improvement in blood flow.

- Neurologic evaluation. doctor usually assesses possible nerve damage by conducting a physical examination to test for normal touch sensation in genital area.

- Cavernosometry and cavernosography. Cavernosometry is a test that measures penile vascular pressure. Cavernosography involves injecting a dye into blood vessels to view any possible abnormalities in blood flow into and out of penis.

If no physical abnormality causing erectile dysfunction, the cause may be psychological.

Treatment

- Psychological counseling : Avoid stress, anxiety or depression

- Exlude Organic causes as D.M. & neurological lesions .

- **Drugs :**

1- Oral medications

Oral medications available to treat ED include:

- Sildenafil (Viagra)
- Tadalafil (Cialis)
- Vardenafil (Levitra)

R / Viagra 50 mg or 100 mg tab.

OR : Vega 50 or 100mg. Tab.

قرص قبل الجماع بحوالى نصف إلى ٤ ساعات على معدة خاوية

Mechanism of action : Viagra, Levitra and Cialis work in much the same way. Chemically known as phosphodiesterase inhibitors, these drugs enhance the effects of nitric oxide, a chemical messenger that relaxes smooth muscles of blood vessels in the penis. This increases the amount of blood and allows a natural sequence to occur — an erection in response to sexual stimulation. These medications don't automatically produce an erection. Instead they allow an erection to occur after physical and psychological stimulation.

Contraindication : N.B.Previous medication is contraindicated to be taken in patient with a heart attack, stroke or life-threatening heart rhythm , angina pectoris & with nitrate medications (because combination of these medications, Cause dilatation of blood vessels,leading to dizziness,hypotension & several problems) .

2- Prostaglandin E (alprostadil) :

Two treatments involve using a drug called alprostadil (al-PROS-tuh-dil). Alprostadil is a synthetic version of the hormone prostaglandin E. The hormone helps relax smooth muscle tissue in the penis, which enhances the blood flow needed for an erection. There are two ways to use alprostadil;

- Needle-injection therapy. With this method, you use a fine needle to inject alprostadil (Prostavasin) into the base or side of the penis. This generally produces an erection in five to 20 minutes that lasts about an hour. Because the injection goes directly into the spongy cylinders that fill with blood, alprostadil is an effective Treatment for many men.

Side effects : bleeding from the injection, prolonged erection and formation of fibrous tissue at the injection site.

- Self-administered intraurethral therapy. using a disposable applicator to insert a tiny suppository, about half the size of a grain of rice, into the tip of the penis. The suppository, placed about two inches into urethra, is absorbed by erectile tissue in penis, increasing the blood flow that causes an erection.

Side effects painful method or uncomfortable. In addition to pain, minor bleeding in the urethra, dizziness and formation of fibrous tissue may occur .

3- Hormone replacement therapy :
For the small number of men who have testosterone deficiency

R / Cidoteston 250 mg amp.
حقنة بالعضل كل أسبوع أو أسبوعين

Irreversible cases :

1-Vacuum devices
This Treatment involves the use of an external vacuum and one or more rubber bands (tension rings). To begin patient places a hollow plastic tube, available by prescription, over his penis. He then uses a hand pump to create a vacuum in the tube and pull blood into the penis. Once he achieves an adequate erection, he slips a tension ring around the base of his penis to maintain the erection. He then removes the vacuum device. The erection typically lasts long enough for a couple to have adequate sexual relations. He removes the tension ring after intercourse.

2- Vascular surgery
for men whose blood flow has been blocked by an injury to the penis or pelvic area.

3- Penile implants
This Treatment involves surgically placing a device into the two sides of the penis, allowing erection to occur as often and for as long as desired. These implants consist of either an inflatable device or semirigid rods made from silicone or polyurethane.

Prevention

- Limit or avoid the use of alcohol and other similar drugs.
- Stop smoking.
- Exercise regularly.
- Reduce stress.
- Get enough sleep.
- Deal with anxiety or depression.

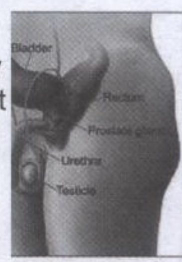
Premature ejaculation

R / Anfranil 25 mg or 75 mg tab.
قرص قبل الجماع بـ٣-٤ ساعات

OR / Lignocaine spray . ٢ بخة على
رأس العضو الذكرى قبل الجماع بنصف ساعة

Or : Lidocaine gel .

- Good psychotherapy .
- Mechanical procedures like pressing on the top of the sex organ or taking a rest just when feeling of ejaculation may be useful in that cases .



Prostate

What is the prostate?

The prostate is a small gland in men.

It is part of the male reproductive system.

The prostate is about the size and shape of a walnut. It sits low in the pelvis, below the bladder and just in front of the rectum. The prostate helps make semen, the milky fluid that carries sperm from the testicles through the penis when a man ejaculates.

The prostate surrounds part of the urethra, a tube that carries urine out of the bladder and through the penis.

How does the prostate change as patient gets older?

The prostate gland surrounds the tube (urethra) that passes urine. This can be a source of problems as a man ages because:

- The prostate tends to grow bigger with age and may squeeze the urethra or
- A tumor can make the prostate bigger

- These changes, or an infection, can cause problems passing urine. Sometimes men in their 30s and 40s may begin to have these urinary symptoms and need medical attention.

What prostate changes should patient be aware of?

The three most common prostate problems are:

- Infection (prostatitis)
- Enlarged prostate (BPH, or benign prostatic hyperplasia)
- Prostate cancer

What are common tests for prostate changes?

Abnormal findings from any of these tests can help diagnose a problem and suggest the next steps to take:

- DRE (digital rectal exam)--a test to feel the prostate
- PSA (prostate-specific antigen) test--a blood test
- Biopsy--a test to check for cancer

prostatitis

Prostatitis is an inflammation or infection of the prostate gland. It affects at least half of all men at some time in their lives.

Prostatitis Symptoms

- Trouble passing urine or pain when passing urine
- A burning or stinging feeling when passing urine
- Strong, frequent urge to pass urine, even when there is only a small amount of urine
- Chills and high fever
- Low back pain or body aches
- Pain low in the belly, groin, or behind the scrotum
- Rectal pressure or pain
- Urethral discharge with

bowel movements
- Genital and rectal throbbing
- Sexual problems and loss of sex drive
- Blocked urine
- Painful ejaculation (sexual climax)

Prostatitis is not contagious. It is not spread through sexual contact.

There are two types of prostatitis:

- **Acute bacterial prostatitis**

This infection comes on suddenly (acute) and is caused by bacteria. Symptoms include severe chills and fever. There is often blood in the urine.

Treatment:

Most cases can be cured with a high dose of antibiotics, taken for 7 to 14 days, and then lower doses for several weeks. Patient may also needs drugs to help with pain or discomfort.

Antibiotic : R / Claforan 1 gm .
حقنة عضل كل ١٢ ساعة

Then : R / septrin D.S tab.
قرص كل ١٢ ساعة

Or : Ciprofloxacin 500 mg. Or 750 mg tab. قرص كل ١٢ ساعة

Analgesic :
R / Brufen 600 mg tab.
قرص كل ١٢ ساعة

Eff. Granules : R / Coli-urinal eff.
ملعقة على نصف كوب ماء ٣ مرات يوميا

- **Chronic bacterial prostatitis**

Also caused by bacteria, this condition doesn't come on suddenly, but it can be bothersome مزعجة. The only symptom patient may has is bladder infections that keep coming back. The cause may be a defect in the prostate that lets bacteria collect in the urinary tract.

Treatment: Antibiotic Treatment over a longer period of time is best for this type. Treatment lasts from 4 to 12 weeks. This type of Treatment clears up about 60 percent of cases. Long-term, low-dose antibiotics may help relieve symptoms in cases that won't clear up.

R / Norfloxacin tab.
قرص كل ١٢ ساعة لمدة ١٢ أسبوع

Or : Septazole tab.
Or : sutrim tab.
٢ قرص كل ١٢ ساعة لمدة ١٢ أسبوع

Prostate decongestant : for 12 weeks

R / Decongestyl supp.
Or : Deprostyl-2 Supp.
لبوس شرجى صباحا و مساءا

BPH (benign prostatic hyperplasia)

Benign means "not cancer," and hyperplasia means too much growth. The result is that the prostate becomes enlarged. BPH is not linked to cancer and does not raise chances of getting prostate cancer--yet the symptoms for BPH and prostate cancer can be similar.

BPH Symptoms

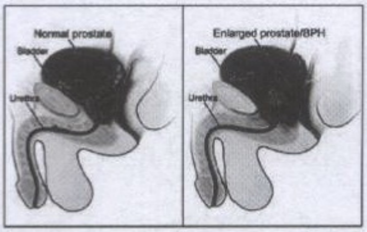
BPH symptoms usually start after the age of 50. They can include:

- Trouble starting a urine stream or making more than a dribble
- Passing urine often, especially at night
- Feeling that the bladder has not fully emptied
- A strong or sudden urge to pass urine
- Weak or slow urine stream
- Stopping and starting again several times while passing urine
- Pushing or straining to begin passing urine

At its worst, BPH can lead to:

- A weak bladder
- Backflow of urine causing bladder or kidney infections
- Complete block in the flow of urine
- Kidney failure

As a normal part of aging, the prostate enlarges and can press against the bladder and the urethra. This can slow down or block urine flow. Some men might find it hard to start a urine stream, even though they feel the need to go. Once the urine stream has started, it may be hard to stop. Other men may feel like they need to pass urine all the time or are awakened during sleep with the sudden need to pass urine.



Urine flow of normal (left) and enlarged prostate (right). In diagram on the left, urine flows freely. On the right, urine flow is affected because of the prostate pressing on the bladder and urethra.

Treatment :

BPH cannot be cured, but drugs or surgery can often relieve its symptoms. BPH symptoms do not always grow worse.

There are three ways to manage BPH:

- Watchful waiting
- Drug therapy
- Surgery

Watchful waiting

Men with mild symptoms of BPH who do not find them bothersome often choose this approach.

Watchful waiting means getting annual checkups. The checkups can include DREs and other tests. Treatment is started only if symptoms become too much of a problem.

If patient chooses to live with symptoms, these simple steps can help:

- Limits drinking in the evening, especially drinks with alcohol or caffeine.
- Empty the bladder all the way when you pass urine.
- Uses the restroom often. doesnot wait for long periods without passing urine.

Drug therapy

There are two main types of drugs used. One type relaxes muscles near the prostate while the other type shrinks the prostate gland. There is evidence that shows that taking both drugs together may work best to keep BPH symptoms from getting worse.

Alpha-blockers

These drugs help relax muscles near the prostate to relieve pressure and let urine flow more freely, but they don't shrink the size of the prostate. For many men, the drug can improve urine flow and reduce symptoms within days. Possible side effects include dizziness, headache, and fatigue.

R / Cardura (doxazosin) 1 mg & 4 mg . tab.

يبدأ المريض بجرعة ١ مجم يوميا ثم تزاد حتى تصل بحد أقصى إلى ٨ مجم يوميا

5 alpha-reductase inhibitor

This drug, known as finasteride, shrinks the prostate. It relieves symptoms by blocking an enzyme that acts on the male hormone, testosterone, to boost organ growth. When the enzyme is blocked, growth slows down. This helps shrink the prostate, reduce blockage, and limit the need for surgery.

R / Proscar (Finasteride) 5 mg. tab.
قرص واحد يوميا

Taking this drug for at least 6 months to 1 year can increase urine flow and reduce symptoms. It seems to work best for men with very large prostates.

This drug is also used to treat baldness in men. It can cause these side effects in a small percentage of men:

- Decreased interest in sex
- Trouble getting or keeping an erection
- Smaller amount of semen with ejaculation

It's important to note that taking this drug can lower PSA test levels. There is also evidence that finasteride lowers the risk of getting prostate cancer, but whether it lowers the risk

of dying from prostate cancer is still unclear.

BPH Medications			
Category	**Activity**	**Generic Name**	***Brand Name***
Alpha-blockers	**Relax muscles near prostate**	**doxazosin tamsulosin terazosin prazosin**	***Cardura Flomax Hytrin Minipres***
5 alphareductase inhibitor	***Slows prostate growth, shrinks prostate***	***finasteride***	***Proscar***

BPH surgery

Types of surgeries include:

- TURP (transurethral resection of the prostate) is the most common surgery for BPH. The doctor passes an instrument through the urethra and trims away extra prostate tissue. A spinal block is used to numb the area. Tissue is sent to the laboratory to check for prostate cancer.

  TURP generally avoids the two main dangers linked to other prostate surgeries:

  - Incontinence (not being able to hold in urine)
  - Impotence (not being able to have an erection)

  The recovery period for TURP is much shorter as well.

- TUIP (transurethral incision of the prostate) is similar to TURP. It is used on slightly enlarged prostate glands. The surgeon places one or two small cuts in the prostate. This relieves pressure without trimming away tissue. It has a low risk of side effects. Like TURP, this treatment helps with urine flow by widening the urethra.
- TUNA (transurethral needle ablation) burns away excess prostate tissue using radio waves. It helps with urine flow, relieves symptoms, and may have fewer side effects than TURP. Most men need a catheter to drain urine for a period of time after the procedure.
- TUMT (transurethral microwave thermotherapy) uses microwaves sent through a catheter to destroy excess prostate tissue. This can be an option for men who should not have major surgery because they have other medical problems.
- TUVP (transurethral electroevaporation of the prostate) uses electrical current to vaporize prostate tissue.
- Open prostatectomy means the surgeon removes the prostate through a cut in the lower abdomen. This is done only in very rare cases when obstruction is severe, the prostate is very large, or other procedures can't be done. General or spinal anesthesia is used and a catheter remains for 3 to 7 days after the surgery. This surgery carries a higher risk of complications than medical treatment. Tissue is

sent to the laboratory to check for prostate cancer.

Nephrotic syndrome

Definition

Nephrotic syndrome is a group of symptoms including protein in the urine (exceeding 3.5 grams per day), low blood protein levels (Hypoproteinemia) < 3 gm/100 ml. , high cholesterol levels (> 300 mg /100ml) , and swelling (edema). The urine may also contain fat, which is visible under the microscope.

Causes, incidence, and risk factors

Nephrotic syndrome is caused by various disorders that damage the kidneys, particularly the basement membrane of the glomerulus. This immediately causes abnormal excretion of protein in the urine.

The most common cause in children is minimal change disease, while membranous glomerulonephritis is the most common cause in adults.

This condition can also occur as a result of infection, drug exposure, malignancy (cancer), hereditary disorders, immune disorders, or diseases that affect multiple body systems including diabetes, systemic lupus erythematosus, multiple myeloma, and amyloidosis. It can accompany kidney disorders, including glomerulonephritis; focal and segmental glomerulosclerosis, and mesangiocapillary glomerulonephritis.

Nephrotic syndrome can affect all age groups. In children, it is most common from age 2 to 6. This disorder occurs slightly more often in males than females.

Symptoms

- Swelling (edema)
  - general
  - around the eyes
  - in the extremities, especially the feet and ankles
- Swollen abdomen
- Facial swelling
- Foamy appearance of the urine
- Weight gain (unintentional) from fluid retention
- Poor appetite
- High blood pressure

Signs and tests

Physical examination can detect some symptoms. Other symptoms and signs of causative disorders can also be found with examination.

Urinalysis reveals large amounts of urine protein. Fats are often also present in the urine.

Tests to rule out various causes may include the following:

- Glucose tolerance test
- Antinuclear antibody
- Rheumatoid factor
- Cryoglobulins

- Complement levels
- Hepatitis B and C antibodies
- VDRL serology
- Serum protein electrophoresis
- Kidney biopsy

This disease may also alter the results of the following tests:

- Urinary casts
- Triglyceride
- Protein electrophoresis - urine
- Serum iron
- Cholesterol
- Albumin

Treatment

R / Deltacortil 5 mg tab.
Or : Predilone tab.

٢-٤ أقراص كل ٤ ساعات لمدة ١٠ -٣٠ يوما ثم ٢ قرص كل ٤ ساعات أسبوعيا لمدة عام

R / Lasix (furosemide) tab.
Or : Moduretic tab.
١-٢ قرص مرتين يوميا

R / Aldactone 25mg Or 100mg tab.
٣-٥ مجم لكل كجم يوميا مقسمة على ٣-٤ جرعات

R / Potassium Syrup.
ملعقة كبيرة ٣ مرات يوميا

Antibiotics may be needed to control infections :

R / Garamycin 20 , 40 & 80 mg amp.
حقنة عضل كل ١٢ ساعة

Vitamin D may need to be replaced if nephrotic syndrome is chronic and unresponsive to therapy.

R / Devarol amp.
أمبول بالعضل كل أسبوع

- راحة بالسرير .
- تقليل الملح فى الطعام لمنع زيادة إنتفاخ البطن بالماء .
– تناول وجبات غنية بالبروتين .

Acute Renal failure

Definition

Acute (sudden) kidney failure is the sudden loss of the ability of the kidneys to remove waste and concentrate urine without losing electrolytes.

Causes, incidence, and risk factors

There are many possible causes of kidney damage. They include:

- Decreased blood flow, which may occur with extremely low blood pressure caused by trauma, surgery, serious illnesses, septic shock, hemorrhage, burns, or dehydration
- Acute tubular necrosis (ATN)
- Infections that directly injury the kidney such as acute pyelonephritis or septicemia
- Urinary tract obstruction (obstructive uropathy)
- Autoimmune kidney disease such as interstitial nephritis or acute nephritic syndrome
- Disorders that cause clotting within the thin blood vessels of the kidney

- Idiopathic thrombocytopenic thrombotic purpura (ITTP)
- Transfusion reaction
- Malignant hypertension
- Scleroderma,
- Hemolytic-uremic syndrome
- Disorders of childbirth, such as bleeding placenta abruptio or placenta previa

Symptoms

- Decrease in amount of urine (oliguria) < 400 c.c./day
- Or Urination stops (anuria)
- Low specific gravity 1010
- Excessive urination at night
- Ankle, feet, and leg swelling
- Generalized swelling, fluid retention
- Decreased sensation, especially in the hands or feet
- Decreased appetite
- Metallic taste in mouth
- Persistent hiccups
- Changes in mental status or mood
    - Agitation
    - Drowsiness
    - Lethargy الخمود
    - Delirium or confusion
    - Coma
    - Mood changes
    - Trouble paying attention
    - Hallucinations
- Slow, sluggish, movements
- Seizures
- Hand tremor (shaking)
- Nausea or vomiting, may last for days
- Brusing easily
- Prolonged bleeding
- Nosebleeds
- Bloody stools
- Flank الجناح pain (between the ribs and hips)
- Fatigue
- Breath odor
- High blood pressure

Signs and tests

Many patients have generalized swelling caused by fluid retention. The doctor will use a stethoscope to listen to the heart and lungs. A heart murmur, crackles in the lungs, inflammation of the lining of the heart (pericarditis), or other related to extra fluid may be heard.

The results of laboratory tests may change suddenly (within a few days to 2 weeks).

- Urine tests (urinalysis) may be abnormal.
- Serum creatinine, BUN, creatinine clearance, and serum potassium levels may increase.
- Arterial blood gas and blood chemistries may show metabolic acidosis.
- Kidney or abdominal ultrasound are preferred tests, but abdominal x-ray, abdominal CT scan, or abdominal MRI can tell if there is a blockage in the urinary tract.

- Blood tests may help reveal the underlying cause of kidney failure.

Treatment Once the cause is found, the goal of Treatment is to restore kidney function and prevent fluid and waste from building up in the body while the kidneys heal. Usually, patient has to stay overnight in the hospital for Treatment.

The amount of liquid patient eats (such as soup) or drink will be limited to the amount of urine he can produce. He will be told what he may and may not eat to reduce the build-up of toxins normally handled by the kidneys. This diet may be high in carbohydrates and low in protein, salt, and potassium.

Antibiotics to treat or prevent infection.
R / Miphenicol Cap.
Or : Cidocetine Cap.
Or : Thiophenicol tab.
قرص أو كبسولة كل ٦ ساعات

OR : Cefobid (cefoperazone) 0.5 gm & 1 gm vials . حقنة عضل كل ١٢ ساعة
N.B : Cefoperazone and Chloramphenicol are mainly excreted through the liver . But other antibiotics like cephalosporins , tetracyclines are nephrotoxic & should be avoided in ARF . Septrin & septazole should not be used for more than 4 days in ARF .

For vomiting :
R / Primperan tab. or Amp.
قرص أو أمبول عند اللزوم

- Diuretics ("water pills") may be used to help the kidneys lose fluid :

R / Lasix tab. Or amp.
قرص أو أمبول عند اللزوم

- It will be very important to avoid dangerous hyperkalemia (increased blood potassium levels) by using IV (intravenous) calcium, glucose/insulin
. R / Dextrose 50 % , 100 ml.
١٠٠سم٣ بالوريد على مدى ١٥ دقيقة
R / Insulin (soluble) . 30 units .
٣٠ وحدة بالوريد على مدى ١٥ دقيقة
R / Sodium bicarbonate 8.4% , 100ml . ١٠٠سم ٣ بالوريد على مدى ١٥ دقيقة

In addition to :
R / Calcium gluconate 10% , 50 ml i.v. over 10 min. don't added to the above mixture . ٥٠ سم٣ بالوريد على ببطء على مدى ١٠ دقائق
N.B. sodium bicarbonate used also for metabolic acidosis .

For Seizures :
R / Valium 10 mg Amp.
٥-١٠ ملجم بالوريد ببطء

Haemodialysis may be needed, and can make patient feels better. It is not always necessary, but it can save his life if his serum potassium is dangerously high. Dialysis will also be used if his mental status changes, his potassium level starts to rise, he stop urinating, develops pericarditis, become overloaded with fluid, or cannot eliminates nitrogen waste products from his body.

Chapter -15
Neurological Disorders

Migraine headache

Signs and symptoms

A typical migraine headache attack produces some or all of these signs and symptoms:

- Moderate to severe pain may be only one side of the head, or on both sides
- Head pain with a pulsating or throbbing quality
- Worse with routine physical activity
- Nausea with or without vomiting
- Sensitivity to light and sound

When left untreated, a migraine headache typically lasts from four to 72 hours .

Types :

1- Common migraines (without aura).

2- Classic migraines (with aura).

3- Complicated migraine (hemiplegic , Ophthalmoplegic , Basilar artery migraine , Acute confusional state)

4- Migraine variants (e.g. Cyclic vomiting) .

Causes

Although much about headaches still isn't understood, some researchers think migraines may be caused by functional changes in the trigeminal nerve system, a major pain pathway in nervous system, and by imbalances in brain chemicals, including serotonin, which regulates pain messages going through this pathway.

During a headache, serotonin levels drop. Researchers believe this causes the trigeminal nerve to release substances called neuropeptides, which travel to brain's outer covering. There they cause blood vessels to become dilated and inflamed. The result is headache pain.

Migraine headache triggers

Anxiety , depression , use of oral contraceptives , hypertension & excessive intake of rgotamine , analgesics or caffeine .

Screening and **Diagnosis**

a computerized tomography (CT) head scan or magnetic resonance imaging (MRI) — a diagnostic imaging procedure produce clear images of internal organs, including brain.

Treatment

Pain-relieving medications
It may help at rest or sleep in a dark room after taking them:

1-Nonsteroidal anti-inflammatory drugs (NSAIDs).

R / Brufen (Ibuprofen) tab.
قرص عند اللزوم

Or:Excedrin (acetaminophen, aspirin and caffeine)tab. قرص عند اللزوم

2-Triptans : e.g. Sumatriptan , It mimics the action of serotonin by binding to serotonin receptors and causing blood vessels to constrict.

R / Imigran 50 mg tab.

OR : Relapex (eletriptan) tab.
قرص عند اللزوم

Side effects : of triptans include nausea, dizziness, and muscle weakness and, rarely, stroke and heart attack.

3-Ergots : e.g.

R / Migranil tab.
Or : No-migrain tab.
Or : Amigraine tab.
OR : Spasmomigran tab.
٢ قرص عند اللزوم

4- Medications for nausea.

Metoclopramide is useful for relieving the nausea and vomiting associated with migraines, such as

R / Primperan tab , amp.
قرص أو أمبول عند اللزوم

Preventive medications

- Avoid triggers.
– Relaxation .

Preventive medications can reduce the frequency, severity and length of migraines and may increase the effectiveness of pain-relieving medicines used during migraine attacks.

1- Cardiovascular drugs.

Beta blockers — which are commonly used to treat high blood pressure and coronary artery disease — can reduce the frequency and severity of migraines, such as

R / Inderal 10 mg or 40 mg tab.
١٠ – ٤٠ مجم مرتان يوميا

Other type of cardiovasculat drugs :

R / Catapres 0.5 mg tab.
ربع إلى نصف قرص مرتان يوميا

2-Antidepressants. Certain antidepressants are good at helping prevent all types of headaches, including migraines.

tricyclic antidepressants, may reduce migraines by affecting the level of serotonin and other brain chemicals, such as amitriptyline, nortriptyline

R / Tryptizol 10 mg or 25 mg tab.
قرص كل مساء يزاد تدريجيا إلى ٧٥ مجم كل مساء

3-Anti-seizure drugs. Although the reason is unclear, some anti-seizure drugs which are used to treat epilepsy and bipolar disease, seem to prevent migraines, such as

R / Depakine (valproic acid)
200mg and 500mg tab.
قرص مرة إلى مرتين يوميا

4-Cyproheptadine. This antihistamine specifically affects serotonin activity. Doctors sometimes give it to children as a preventive measure.

R / Triactin 4 mg. tab.
قرص ٣ مرات يوميا

Tension headache

A tension headache is the most common headache, and yet it's not well understood. A tension headache generally produces a diffuse, usually mild to moderate pain over head. A tension headache may also cause pain in the back of neck at the base of skull.

Signs and symptoms

A tension headache may cause a dull, achy pain or sensation of tightness in forehead or at the sides and back of head. Many people liken the feeling to having a tight band of pressure encircling their heads. In its most extensive form, the pain feels like a hooded cape that drapes down over the shoulders. The headache is usually described as mild to moderately intense.

Some people with tension headache experience neck or jaw discomfort or a clicking sound when opening the jaw. There may also be:

- Tenderness on the scalp, neck and shoulder muscles
- Difficulty sleeping (insomnia)
- Fatigue
- Irritability
- Loss of appetite
- Difficulty concentrating

Unlike some forms of migraine, tension headache usually isn't associated with visual disturbances (blind spots or flashing lights), nausea, vomiting, abdominal pain, weakness or numbness on one side of the body, or slurred speech. While physical activity typically aggravates migraine pain, it doesn't make tension headache pain any worse. A few people with tension headache experience an increased sensitivity to light or sound, but this isn't a common symptom.

Two classifications.

1-Episodic :

- occurs on fewer than 15 days a month.
- usually brief, lasting a few minutes to a few hours.
- In one survey of people with episodic tension headache, over 60 percent had scalp

and neck muscle tenderness in addition to head pain.

2-Chronic.

- Occurs on 15 days a month or more for at least three months.

- Compared with the episodic form, chronic tension headache is less common, but twice as many women as men have the chronic form.

- pain is daily and almost continuous.
- Like the episodic form, chronic tension headache can be with or without scalp tenderness.

- People with chronic tension headache are more likely to experience anxiety or depression, compared with people who don't have headaches.

Triggers and aggravators:

- Stress
- Depression and anxiety
- Lack of sleep or changes in sleep routine
- Skipping meals
- Poor posture
- Working in awkward positions or holding one position for a long time
- Lack of physical activity
- Occasionally, hormonal changes related to menstruation, pregnancy, menopause or hormone use
- Medications used for other conditions, such as depression or high blood pressure
- Overuse of headache medication
- jaw pain from clenching or grinding teeth (bruxism) or by head trauma
- Stiff joints and muscles due to arthritis of the neck or inflammation of the shoulder joints

Screening and **Diagnosis**

a computerized tomography (CT) head scan or magnetic resonance imaging (MRI) — a diagnostic imaging procedure produce clear images of internal organs, including brain.

Treatment

- معالجة السبب .
- تمرينات استرخاء و تدليك الرقبة والظهر .

1- Non-narcotic analgesics & muscle relaxants for 2 weeks :

R/ Brufen tab.
Or : Ponstan forte tab.
قرص عند اللزوم

R / Norgesic tab.
Or : Myofen tab.
قرص ٣ مرات يوميا

2- Antidepressants for depressed patients :

R / Tryptizol 25 mg tab.
١-٢ قرص قبل النوم

OR : Efexor (Venlafaxine) 75 mg tab. قرص واحد يوميا

Cluster headache

Three forms are identifiable :

1- Episodic cluster headache (recure in bots) .
2- Chronic cluster headache or chronic migrainous neuralgia 9 regular attacks without remission)
3- Chronic paroxysmal hemicrania (brief attacks recur ≥6 times daily)

Treatment :

1- Episodic cluster headache :
R / Migrainil tab. ٢ قرص مرتين يوميا
R / Excedrin tab.
Or : Ponstan forte tab.

٢ قرص قبل الوقت المتوقع للنوبات بساعة إلى ساعتين

If Ineffective :
R / Hostacortin 5 mg. tab.

١٢ – ١٥ قرص كل مساء لمدة ٣ ليالى ثم تخفض الجرعة تدريجيا إلى الحد الذى يضبط النوبات

If pains continue :
R / Neurazine 25mg tab.
قرص ٣ مرات يوميا

2- Chronic cluster headache :
Same measures as in 1 .

If failed :
R / Isoptin 40 mg tab.
Or : Adalat retard 20 mg tab.
Or : Epilat retard 20 mg tab.

نصف قرص مرتان يوميا يزاد تدريجيا إلى ١-٢ قرص كل ٦ – ٨ ساعات

3- Chronic paroxysmal hemicrania :
R / Indocid 25mg Cap.
Or : indomethacin 25 mg Cap.

كبسولة بعد الأكل ٣ مرات يوميا

Epilepsy

Epilepsy is a chronic disorder of the brain that causes a tendency to have recurrent seizures. Two or more seizures must occur before a person can receive the diagnosis of epilepsy, also known as a seizure disorder.

Seizures occur when there's a sudden change in the normal way brain cells communicate through electrical signals. During a seizure, some brain cells send abnormal signals, which stop other cells from working properly. This abnormality may cause temporary changes in sensation, behavior, movement or consciousness.

The onset of epilepsy is most common during childhood and after age 65, but the condition can occur at any age. Treatments may be able to leave patient free of seizures, or at least reduce their frequency and intensity. Many children with epilepsy outgrow the condition with age.

Signs and symptoms

Because abnormal brain cell activity causes seizures, having a seizure can result in the sudden occurrence

of any activity that's coordinated by brain. This can include temporary confusion, complete loss of consciousness, a staring spell, or uncontrollable, jerking movements of the arms and legs. Signs and symptoms may vary depending on the type of seizure. Most people with epilepsy experience the same type of seizure, with similar symptoms, each time they have a seizure, but others may experience a wide range of types and symptoms.

Doctors classify seizures as either partial or generalized, based on how the abnormal brain activity begins. When seizures appear to result from abnormal activity in just one part of the brain, they're called partial seizures. When seizures seem to involve most or all of the brain, the seizures are called generalized.

Both classifications are broken up further into smaller, more specific categories:

- Partial seizures are separated into simple partial, complex partial and secondary generalized seizures.
- Primary generalized seizures are separated into absence (petit mal), myoclonic, atonic and generalized tonic-clonic (grand mal) seizures.

Partial seizures

- Simple partial seizures. These seizures begin from a small area in brain and don't result in loss of consciousness. They may cause uncontrolled shaking of an arm, leg, or any other part of the body; alter emotions; change the way things look, smell, feel, taste, or sound; or cause speech disturbance.
- Complex partial seizures. These seizures also begin from a small area of brain. They alter consciousness and usually cause memory loss (amnesia). They can cause staring and nonpurposeful movements, such as repeated hand rubbing الفرْك , lip smacking, posturing of arm, vocalization or swallowing. After the seizure ends, patient may be confused or sleep for a few minutes and may be unaware he had the seizure.
- Secondary generalized seizures (partial seizures with secondary generalization). These seizures occur when simple or complex seizures spread to involve entire brain. They may begin as a complex partial seizure with staring التّحْديق and nonpurposeful movements. The seizure then becomes more intense, leading to generalized convulsions characterized by stiffening and shaking of extremities and the body with loss of consciousness.

Generalized seizures

- Absence (petit mal seizures). These seizures are characterized by staring, subtle غير ملحوظ body movement and

brief lapses فترات of awareness. They're usually brief, and typically no confusion or sleepiness occurs when the seizure is over.

- Myoclonic seizures. These seizures usually appear as sudden jerks الهزّات of arms and legs. Myoclonic seizures may last only a short time — from less than a second for single jerks to a few seconds for repeated jerks.
- Atonic seizures. Also known as drop attacks, these seizures cause patient to suddenly collapse تنهار or fall down. After a few seconds, he regains consciousness and is able to stand and walk.
- Generalized tonic-clonic (grand mal seizures). The most intense of all types of seizures, these are characterized by a loss of consciousness, body stiffening and shaking, and sometimes tongue biting الكَبْح or loss of bladder control. After the shaking subsides, a period of confusion or sleepiness usually occurs, lasting for a few minutes to a few hours.

Causes

The onset of epilepsy can often be traced to an accident, disease or medical trauma — such as a stroke — that injures brain or deprives it of oxygen, often causing a small scar in brain. In rare occasions, epilepsy may be caused by a tumor in brain. However, in many cases there's no identifiable cause for the disease.

Screening and **Diagnosis**

- Medical history.
- Physical and neurological examination. A neurological examination may include testing patient reflexes, muscle tone and strength, the function of his senses, and his gait, posture, coordination and balance. also asking questions to test his thinking, judgment and memory.
- Blood tests. for chemical imbalances that may be the cause of seizures.
- Electroencephalogram (EEG). This procedure records the electrical activity of brain. An EEG helps determine what type of seizures or epilepsy patient has and from which part of the brain seizures may start. During the procedure, which takes about a half-hour, patient lies lie down. Between 16 and 30 small electrodes may be attached to his scalp with paste or an elastic cap. He remains still during the test, but at times he may be asked to breathe deeply and steadily for several minutes or to stare at a patterned board. At times a light may be flashed in his eyes. These actions are intended to stimulate his brain in ways that might be seen on the EEG. The electrodes pick up the electrical impulses from his brain and

send them to the EEG machine, which records his brain waves on a moving sheet of paper or digitally on a computer screen.

- Computerized tomography (CT). A CT scan produces detailed cross-sectional images of brain. The images may reveal abnormalities in brain structure, including tumors, cysts, strokes or tangled blood vessels.

- Magnetic resonance imaging (MRI). An MRI scan uses a powerful magnetic field and radio waves to produce images of brain. Like CT scans, MRI images may reveal abnormalities in brain

Treatment

General lines in Treatment of epilepsy :

- Normal daily activities : school , college , ……but :
  - Not to work in heights .
  - Driving cars is OK if no fits نوبات for 3 years
  - Nor swimming , diving , boxing , football .
- Psychotherapy : secondary depression is common . the patient assurance . Anti-depressants are not given as they may be epileptogenic .
- Diet : Ketogenic is better : CHO & Fat 1:3 .

- Ketogenic diet. If patient doesn't benefit from medication or if the side effects are intolerable, you may suggest a rigid diet that's high in fat and low in protein and carbohydrates. The goal of the diet is to get the body to produce ketones, which cause the body to use fat instead of glucose for energy. The process has an effect against seizures, although the exact way in which it works is unclear. The diet, which prescribes exact amounts of specific foods and beverages for each meal, must be strictly followed in order to be effective. Even a tiny intake of sugar can significantly alter the effectiveness of the diet. Nonetheless, it has proved helpful in two out of three children placed on the diet. It's usually implemented for a limited period of time and isn't as effective in adults as it is in children.

- Precautions with drug therapy :

1- Start with one drug in small dose to be increased gradually . many doctor likely will first prescribe a single drug at a relatively low dosage, and may increase the dosage gradually until seizures are well controlled. If patient has tried two or more single drug regimens without success, a combination of two drugs may be recommend .
2- Do not shift to another drug before reaching maximum dose which doesn't produce toxic symptoms . Faliure of control is agreement for change to another drug.
3- Withdrawal of the drug should be gradual over 2 years

otherwise frequency of fits is increased .

4- Criteria for dose adjustment : frequency of attacks – duration of attacks – E.E.G. changes .
5- Discontinuation of antiepileptic therapy can be tried in patient who remain seizure-free for 2-3 years . The dose is kept constant for the first year & if the criteria of control are good & EEG discharge has decreased , then gradually decrease the dose . The danger in this way is that if fits recur during the minimization of dose , the patient would take the drug for good .
6- During pregnancy : use phenobarbitone with care . Epanutin is used with care three times daily .

Medications

Finding the right medication and dosage can be complex. It might take more than one drug, or trying several different drugs until the right one is found.

Treatment of Simple partial seizures :

(with or without secondary generalization) .

R / Tegretol (carbamazepine) 200 mg tab. Or 100mg/5ml Syrup.

الأقراص : نصف -١ قرص ٣ مرات يوميا .
الشراب : ملعقة ٣ مرات يوميا

Or :Epanutin (phenytoin) 50 mg or 100mg Cap.

كبسولة بعد الأكل ٣ مرات يوميا .

Or :Epanutin Syrup. ملعقة ٣ مرات يوميا

OR/ Sominal 60 mg tab.

١-٢ قرص مرة واحدة مساء

Or ; Sominal Elixir .

ملعقة مرة واحدة مساء

+ Treatment the cause .

Treatment of Complex partial seizures :

R / Tegretol 200mg tab.

Or : Tegretol Cr Divitabs , 200 , 400 mg .

Or : Depakine (valproic acid)200mg tab.

Or : Depakine chrono 500mg tab.

Or : Depakine solution .

or : Depakine Syrup.

قرص أو ملعقة صغيرة فى اليوم لمدة ٣ أيام تزاد إلى
٣ أقراص أو ٣ ملاعق يوميا بعد ذلك .

Treatment of Absence (petit mal seizures)

R / Depakine tab.

Or : Depakine solution .

OR / Zarontin (ethosuximide) 250mg Cap. & 250 mg /5 ml Syrup.

كبسولة أو ملعقة ٣ مرات يوميا

Treatment of Myoclonic seizures:

R / Depakine tab. Or Syrup.

OR / Rivotril (Clonazepam) 0.5 mg or 2mg tab.

قرص ٢-٤ مرات يوميا

Treatment of grand mal seizures :

R/ Depakine tab. Or Syrup.

Or : Tegretol tab. Or Syrup.

Or : Epanutin cap. Or Syrup.
Or : Sominal tab. Or Elixir .

Other antiepileptic drugs :

Trade name	*Scientific name*
Neurontin 400mg cap.	*gabapentin*
Mysoline 0.25 mg tab.	*primidone*
Trileptal tab.	*oxcarbazepine*
Lamictal tab.	*lamotrigine*
Topamax tab.	*topiramate*

Notes :

- For prolonged or cluster seizures, you may prescribe a sedative, such as diazepam (Valium) or lorazepam (Ativan).
- For a child who has infantile spasms, or severe seizures that don't respond to more commonly used medications, a steroid drug called adrenocorticotropic hormone (ACTH) is sometimes prescribed and given as an injection.

R / Synacthen (ACTH) Depot amp.

حقنة بالعضل كل صباح لمدة ٣ أسابيع ثم يوم بعد يوم لمدة ٣ أسابيع ثم تخفض الجرعة تدريجيا حتى يوقف على مدى ٤ أسابيع .

Surgery

Some people with epilepsy have seizures that medications can't control, because the drugs either cause intolerable side effects or don't provide satisfactory seizure control. In such cases, surgery may be an option.

Surgery is most commonly done when tests show that seizures originate in a small, well-defined area, or focus, in the temporal lobes or the frontal lobes of brain. Surgery is rarely an option if patient has seizures that start in several areas of the brain or if he has seizures originating from a region of the brain that contains vital brain functions.

During the procedure, surgeon makes an incision in scalp and removes a piece of the skull bone. Using electrical recordings that monitor brain activity, the surgeon cuts into or removes the area of the brain that's causing the seizures.

Although many people continue to need some medication to help prevent seizures after surgery, patient may be able to take fewer drugs and reduce his dosages. In some cases, surgery for epilepsy can cause complications such as permanently altering cognitive abilities and personality.

Encephalitis

"Encephalitis" means "inflammation of the brain," but it usually refers to brain inflammation caused by a virus. This severe and potentially life-threatening disease is rare.

The illness occurs in two forms — a primary form and a secondary form. The primary form of the disease is more serious, while the secondary form is more common. But because of the milder nature of secondary encephalitis, doctors actually see more cases of primary encephalitis.

Signs and symptoms

Most people infected with viral encephalitis have only mild symptoms — headache, irritability or lethargy — or no symptoms, and the illness doesn't last long. Serious cases can cause:

- Drowsiness
- Confusion and disorientation
- Seizures
- Sudden fever
- Severe headache
- Nausea and vomiting
- Tremor or convulsions
- Stiff neck — occasionally
- Bulging in the soft spots (fontanels) of the skull in infants

Causes

The cause of encephalitis is most often a viral infection. Some examples include herpes viruses; arboviruses transmitted by mosquitoes, ticks and other insects; and rabies and monkeypox viruses transmitted through animal bites.

Encephalitis takes two forms, categorized by the two ways that viruses can infect brain:

- Primary encephalitis. This occurs when a virus directly invades brain and spinal cord. It can happen to people at any time of the year (sporadic encephalitis), or it can be part of an outbreak (epidemic encephalitis).
- Secondary (post-infectious) encephalitis. This form occurs when a virus first infects another part of the body and secondarily enters brain.

Also, bacterial infections, such as Lyme disease, can sometimes lead to encephalitis, as can parasitic infections, such as toxoplasmosis (in people with weakened immune systems) and roundworm infections (transmitted through raccoon feces).

Here are some of the more common causes of encephalitis:

Herpes viruses

Some herpes viruses that cause common infections may also cause encephalitis. These include: Herpes simplex virus , Varicella-zoster virus , Epstein-Barr virus.

Childhood infections

In rare instances, secondary encephalitis occurs after common childhood viral infections, including: Measles (rubeola) , Mumps , Rubella (German measles)

Arboviruses

Screening and **Diagnosis**

- Spinal tap (lumbar puncture). analyzing the cerebrospinal fluid surrounding brain and spinal cord.

Method : A needle inserted into lower spine extracts a sample of fluid for laboratory analysis, which may reveal the presence of an infection or an increased white blood count — a signal that immune system is fighting an infection.

- Electroencephalography (EEG). measures the waves of electrical activity produced by brain. It's often used to diagnose and manage seizure disorders. A number of small electrodes are attached to scalp with paste or an elastic cap as recline. a light may be flashed in eyes to stimulate brain. The electrodes pick up the electrical impulses from brain and send them to the EEG machine, which records brain waves on a moving sheet of paper. An abnormal EEG result may suggest encephalitis
- Brain imaging. A computerized tomography (CT) or magnetic resonance imaging (MRI) scan
- Brain biopsy. Rarely
- Blood testing. may show a rising level of an antibody to the virus

Complications

Respiratory arrest, coma and death. mental impairment, which can include loss of memory, the inability to speak coherently, lack of muscle coordination, paralysis, or hearing or vision defects.

Treatment

- Rest and a healthy diet, including plenty of liquids, to let immune system fight the virus.

R / Decadron Amp.
Or : Fortacorten Amp.
٤-٨ مجم بالوريد كل ٦ ساعات

For seizures :
R / Valpam 10 mg .
For herpes encephalitis :
R / Zovirax 250 mg . amp .
١٠مجم لكل كجم كل ٨ ساعات بالوريد ببطء على مدى ساعة

Huntington's chorea

Huntington's disease (Huntington's chorea) is a progressive, degenerative disease that causes certain nerve cells in brain to waste away. As a result, patient may experience uncontrolled movements, emotional disturbances and mental deterioration. The disorder was documented in 1872 by American physician George Huntington. The name "chorea" comes from the Greek word for "dance" and refers to the incessant quick, jerky, involuntary movements that are characteristic of this condition.

Huntington's disease is an inherited disease. Signs and symptoms usually develop in middle age, and men and women are equally likely to develop the condition. Younger people with Huntington's disease often have a

more severe case, and their symptoms may progress more quickly. Rarely, children may develop this condition.

Signs and symptoms

The earliest signs and symptoms of Huntington's disease often include personality changes and decreased cognitive abilities. patient may demonstrate symptoms such as irritability, anger or paranoia or show signs of depression. He may also begin to has difficulty making decisions, learning new information, answering questions and remembering important information. his family and friends may notice these changes before he becomes aware of them.

Early physical signs and symptoms of Huntington's disease may include mild balance problems, clumsiness and involuntary facial movements such as grimacing. As the disease progresses, patient may develop:

- Sudden jerky, involuntary movements (chorea) throughout body
- A wide, prancing gait
- Severe problems with balance and coordination
- Difficulty shifting gaze النظرة without moving head
- Hesitant متردد, halting or slurred speech
- Inability to swallow
- Dementia

Young people who develop Huntington's disease may have symptoms that mimic Parkinson's disease, including muscle rigidity, tremors and slow movements. Those with early-onset Huntington's disease also may develop seizures.

The disease usually develops slowly, and the severity of signs and symptoms is related to the degree of nerve cell loss. Death occurs about 10 to 30 years after signs and symptoms first appear.

Causes

Huntington's disease is an inherited condition caused by a single abnormal gene. Doctors refer to the illness as an autosomal dominant disorder because only one copy of the defective gene, inherited from either parent, is necessary to produce the disease. If one parent has the single faulty gene, the chance that an offspring will have the defect is 50 percent. Because signs and symptoms typically appear in middle age, some parents may not know they carry the gene until they've already had children and possibly passed on the trait.

If child doesn't inherit the faulty gene, he or she won't develop Huntington's disease and can't pass it on to the next generation. Everyone who has the gene eventually develops Huntington's disease, if he or she lives long enough.

Risk factors

If one of patient's parents has Huntington's disease, patient has a 50 percent chance of developing the disease. In rare cases, patient may

develop Huntington's disease without having a family history of the condition. Such an occurrence may be the result of a genetic mutation that happened during father's sperm development.

Screening and Diagnosis

- Physical exam.
- Medical history and that of his family. He or she may also ask about any recent emotional or intellectual changes he or she has had.
- A computerized tomography (CT) or magnetic resonance imaging (MRI) scan may show any changes to brain's structure.
- a blood test to determine whether patient carries the defective gene.

Complications

After onset of the disease, signs and symptoms continue until death. Though the signs and symptoms vary from person to person, vital functions such as swallowing, eating, speaking and walking usually degenerate over time. Many people with Huntington's disease develop depression, and some are at risk of suicide. However, death generally occurs as a result of complications of the disease, such as an infection or a fall.

Treatment

No satisfactory treatment is available to stop or reverse Huntington's disease, but some approaches can control signs and symptoms.

Medications

- Tranquilizers such as
R / **Rivotril (clonazepam) Tab.**
Or : **Apetryl tab.**
Or : **Amotril tab.**

٠,٢٥ مجم مرتان يوميا ، يزاد تدريجيا إلى ٦ مجم يوميا

- Antipsychotic drugs can help control movements, violent outbursts and hallucinations.such as
R / **Haldol (haloperidol) .**
١,٥ – ٥ مجم من ٣-٤ مرات يوميا

- Various medications that can help control depression and the obsessive-compulsive rituals that some people with Huntington's disease develop, including

R / **Prozac (fluoxetine) Cap.**
كبسولة واحدة يوميا

R / **Lustral (sertraline) tab.**
قرص واحد يوميا

- Medications that can help control extreme emotions and mood swings , such as

R / **Prianil C.R (lithium) tab.**
قرص ١-٢ مرة يوميا

N.B. Side effects from many of the drugs used to treat the symptoms of Huntington's disease may include hyperexcitability, fatigue and restlessness. In some instances, antipsychotic drugs may cause side effects that mimic the signs of

Parkinson's disease, including involuntary twitching in face and body (tardive dyskinesia).

Speech therapy

Huntington's disease can impair speech, affecting ability to express complex thoughts. patient may find that speech therapy helps. Remind friends, family members and caregivers that if he doesn't speak, it doesn't necessarily mean that he doesn't understand what's going on. Ask people to continue talking to him and keep his environment as normal as possible.

Prevention

If patient has a family history of Huntington's disease, he may want to consider genetic counseling before starting a family. A blood test can determine the presence of the faulty gene, even before he shows signs or symptoms. If one parent carries the defective gene, his or her child has a 50 percent chance of developing Huntington's disease.

If patient is at risk of passing the genetic defect that causes Huntington's disease to his children, he may wish to consider adoption or certain forms of assisted reproduction. One possibility is in vitro fertilization with pre-implantation screening. In this procedure, embryos are screened for the Huntington's disease gene mutation, and those that don't have the mutation are then implanted in the woman's uterus.

Myasthenia Gravis

Myasthenia gravis is a chronic disorder characterized by weakness and rapid fatigue of any of the muscles under voluntary control. The cause of myasthenia gravis is a breakdown in the normal communication between nerves and muscles.

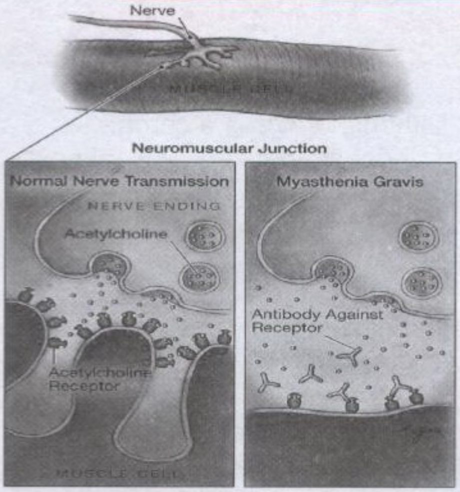
The disorder affects only the function of muscles, and the muscle weakness which the patient experience improves when he rest.

Signs and symptoms

Myasthenia gravis can affect any of the muscles that the patient controls voluntarily. It most commonly affects certain muscles, including those of face, eyes, arms and legs, and those muscles involved in chewing, swallowing and talking. Muscles that control breathing and the movement of head, arms and legs also can be involved. Signs and symptoms may include:

- Facial muscle weakness, including drooping eyelids
- Double vision
- Difficulty in breathing, talking, chewing or swallowing
- Muscle weakness in arms or legs
- Fatigue brought on by repetitive motions

Causes



When neuromuscular system functions normally, the chemical acetylcholine transmits nerve impulses to muscles. At specialized areas of muscles, called neuromuscular junctions, receptor sites receive nerve impulses and signal muscles to contract, such as when raise a spoon to mouth.

In myasthenia gravis, there's a breakdown in communication between nerves and muscles. The culprit is immune system. For unknown reasons, myasthenia gravis causes immune system to produce antibodies that block or destroy many of the receptor sites for acetylcholine in muscles. With fewer receptor sites available, muscles receive fewer nerve signals, resulting in weakness.

It's believed that the thymus gland, a part of immune system located in the upper chest beneath the breastbone, may trigger or maintain the production of these antibodies. Large in infancy, the thymus is small in healthy adults. But, in some adults with myasthenia gravis, the thymus is abnormally large. Some people also have tumors of the thymus. Usually, thymus gland tumors are noncancerous (benign).

Some factors can make myasthenia gravis worse, including fatigue, illness, stress, extreme heat, and some medications, such as beta blockers, calcium channel blockers, quinine and some antibiotics.

Screening and **Diagnosis**

The key sign that points to the possibility of myasthenia gravis is muscle weakness that improves with rest. Tests to confirm the diagnosis may include:

- Neurological examination. This may include testing of reflexes, muscle strength, muscle tone, senses of touch and sight, gait, posture, coordination, balance and mental skills.
- Blood analysis. A blood test may reveal the presence of abnormal antibodies that disrupt the receptor sites where nerve impulses signal muscles to move.
- Edrophonium test. Injection of the chemical edrophonium (Tensilon) may result in a sudden, although temporary, improvement in muscle strength, an indication that may have myasthenia gravis. Edrophonium acts to block an enzyme that breaks down

acetylcholine, the chemical that transmits signals from nerve endings to muscle receptor sites.

- Nerve conduction studies and single-fiber electromyography. During the first part of this test, a small electrical impulse is applied to skin, stimulating nerves in order to test the strength of muscle contraction. In the second part, a thin-needle electrode inserted into one of muscles helps measure patterns of electrical activity in muscle at rest and with slight muscle

Treatment

- Medications.

1- Drugs called cholinesterase inhibitors, enhance communication between nerves and muscles. These drugs don't treat the underlying problem, but they do improve muscle contraction and muscle strength, such as

R / Mestinon (pyridostigmine) 60 mg tab.
١-٢ قرص ٣ مرات يوميا فى اليوم

R / Prostigmin (neostigmine) 15mg tab.

R / Neostigmine 15 mg tab.
R / Epistigmine 15 mg tab.

١٥ – ٣٧٥ مجم فى اليوم مقسمة على ٣ مرات و يعطى نصف مجم أتروبين تحت الجلد قبلها بربع ساعة .

2- Corticosteroids inhibit the immune system, limiting antibody production. Prolonged use of corticosteroids, however, can lead to serious side effects, such as bone thinning, weight gain, diabetes, increased risk of some infections and a redistribution of body fat. Such as ,

R / Hostacortin tab.
١٢ قرص (٦٠ مجم) فى البداية تخفض تدريجيا إلى قرصين يوميا

3- other medications that alter immune system, such as azathioprine (Imuran), mycophenolate mofetil (CellCept), cyclophosphamide (Cytoxan) or cyclosporine (Sandimmune, Neoral).

4- Surgery. It's generally been believed that removal of the thymus gland (thymectomy) brings relief to the majority of people with myasthenia gravis. But only about 25 percent of those who have the surgery go into remission within a year, and significant improvement is often delayed for years. The surgery has generally been recommended for people younger than 60.

5- Plasmapheresis. This procedure can remedy life-threatening stages of myasthenia gravis. Plasmapheresis involves removal of antibodies from blood that block transmission of signals from nerve endings to muscles' receptor sites. Blood is taken from the body, passed through a filter that removes antibodies and then returned to body.

Trigeminal neuralgia

Signs and symptoms

An attack of trigeminal neuralgia can last from a few seconds to about a minute. Some people have mild, occasional twinges of pain, while other people have frequent, severe, electric-shock-like pain. The condition tends to come and go. Patient may experience attacks of pain off and on all day, or even for days or weeks at a time. Then, he may experience no pain for a prolonged period of time. Remission is less common the longer he has trigeminal neuralgia.

People who have experienced severe trigeminal neuralgia have described the pain as:

- Lightning-like or electric-shock-like
- Shooting
- Jabbing
- Like having live wires in face

Trigeminal neuralgia usually affects just one side of face. The pain may affect just a portion of one side of face or spread in a wider pattern. Rarely, trigeminal neuralgia can affect both sides of face, but not at the same time.

These painful attacks can be spontaneous, but they may also be provoked by even mild stimulation of face, including brushing teeth, shaving or putting on makeup.

Causes



The condition is called trigeminal neuralgia because the painful facial areas are those served by one or more of the three branches of trigeminal nerve. This large nerve originates deep inside brain and carries sensation from face to brain. The pain of trigeminal neuralgia is due to a disturbance in the function of the trigeminal nerve. Trigeminal neuralgia is also known as tic douloureux.

The cause of the pain usually is due to contact between a normal artery or vein and the trigeminal nerve at the base of brain. This places pressure on the nerve as it enters brain and causes the nerve to misfire. Physical nerve damage or stress may be the initial trigger for trigeminal neuralgia.

After the trigeminal nerve leaves brain and travels through skull, it divides into three smaller branches, controlling sensation throughout face:

- The first branch controls sensation in eye, upper eyelid and forehead.
- The second branch controls sensation in lower eyelid, cheek, nostril, upper lip and upper gum.
- The third branch controls sensations in jaw, lower lip, lower gum and some of the muscles used for chewing.

patient may feel pain in the area served by just one branch of the trigeminal nerve, or the pain may affect all branches on one side of his face.

Besides compression from blood vessel contact, other less frequent sources of pain to the trigeminal nerve may include:

- Compression by a tumor
- Multiple sclerosis
- A stroke affecting the lower part of brain, where the trigeminal nerve enters central nervous system

A variety of triggers, many subtle, may set off the pain. These triggers may include:

- Shaving
- Stroking face
- Eating
- Drinking
- Brushing teeth
- Talking
- Putting on makeup
- Encountering a breeze
- Smiling

Trigeminal neuralgia affects women more often than men. The disorder is more likely to occur in people who are older than 50. About 5 percent of people with trigeminal neuralgia have other family members with the disorder, which suggests a possible genetic cause in some cases.

Screening and Diagnosis

- Medical history
- Neurologic examination. During this examination, doctor examines and touches parts of patient's face to try to determine exactly where the pain is occurring and — if it appears that he has trigeminal neuralgia — which branches of the trigeminal nerve may be affected.
- Magnetic resonance imaging (MRI) scan of head.

Treatment

Medications are the usual initial Treatment for trigeminal neuralgia. Medications are often effective in lessening or blocking the pain signals sent to brain. A number of drugs are available. If patient stop responding to a particular medication or experience too many side effects, switching to another medication may work for him.

Medications

- Carbamazepine (Tegretol, Carbatrol). Carbamazepine, an anticonvulsant drug, is the most common medication that doctors use to treat trigeminal neuralgia. In the early stages of the disease, carbamazepine controls pain for most people. However, the effectiveness of carbamazepine decreases over time. Side effects include dizziness, confusion, sleepiness and nausea.

- Baclofen. Baclofen is a muscle relaxant. Its effectiveness may increase

when it's used in combination with carbamazepine or phenytoin. Side effects include confusion, nausea and drowsiness.

- Phenytoin (Dilantin, Phenytek). Phenytoin, another anticonvulsant medication, was the first medication used to treat trigeminal neuralgia. Side effects include gum enlargement, dizziness and drowsiness.
- Oxcarbazepine (Trileptal). Oxcarbazepine is another anticonvulsant medication and is similar to carbamazepine. Side effects include dizziness and double vision.

Doctors may sometimes prescribe other medications, such as lamotrignine (Lamictal) or gabapentin (Neurontin).

Some people with trigeminal neuralgia eventually stop responding to medications, or they experience unpleasant side effects. For those people, surgery, or a combination of surgery and medications, may be an option.

Surgery

The goal of a number of surgical procedures is to either damage or destroy the part of the trigeminal nerve that's the source of pain. Because the success of these procedures depends on damaging the nerve, facial numbness of varying degree is a common side effect. These procedures involve:

- Alcohol injection. Alcohol injections under the skin of face, where the branches of the trigeminal nerve leave the bones of face, may offer temporary pain relief by numbing the areas for weeks or months. Because the pain relief isn't permanent, patient may need repeated injections or a different procedure.
- Glycerol injection. This procedure is called percutaneous glycerol rhizotomy (PGR). "Percutaneous" means through the skin. doctor inserts a needle through patient's face and into an opening in the base of his skull. The needle is guided into the trigeminal cistern, a small sac of spinal fluid that surrounds the trigeminal nerve ganglion (the area where the trigeminal nerve divides into three branches) and part of its root. Images are made to confirm that the needle is in the proper location. After confirming the location, doctor injects a small amount of sterile glycerol. After three or four hours, the glycerol damages the trigeminal nerve and blocks pain signals. Initially, PGR relieves pain in most people. However, some people have a recurrence of pain, and many experience facial numbness or tingling.
- Balloon compression. In a procedure called percutaneous balloon compression of the trigeminal nerve (PBCTN), doctor inserts a hollow needle through patient's face and into an opening in the base of his skull. Then, a thin, flexible tube

(catheter) with a balloon on the end is threaded through the needle. The balloon is inflated with enough pressure to damage the nerve and block pain signals. PBCTN successfully controls pain in most people, at least for a while. Most people undergoing PBCTN experience facial numbness of varying degrees, and more than half experience nerve damage resulting in a temporary or permanent weakness of the muscles used to chew.

- Electric current. A procedure called percutaneous stereotactic radiofrequency thermal rhizotomy (PSRTR) selectively destroys nerve fibers associated with pain. doctor threads a needle through patient's face and into an opening in his skull. Once in place, an electrode is threaded through the needle until it rests against the nerve root.

An electric current is passed through the tip of the electrode until it's heated to the desired temperature. The heated tip damages the nerve fibers and creates an area of injury (lesion). If pain isn't eliminated, doctor may create additional lesions.

PSRTR successfully controls pain in most people. Facial numbness is a common side effect of this type of Treatment. The pain may return after a few years.

- Microvascular decompression (MVD). A procedure called microvascular decompression (MVD) doesn't damage or destroy part of the trigeminal nerve. Instead, MVD involves relocating or removing blood vessels that are in contact with the trigeminal root and separating the nerve root and blood vessels with a small pad. During MVD, doctor makes an incision behind one ear. Then, through a small hole in skull, part of brain is lifted to expose the trigeminal nerve. If doctor finds an artery in contact with the nerve root, he or she directs it away from the nerve and places a pad between the nerve and the artery. Doctors usually remove a vein that is found to be compressing the trigeminal nerve.

MVD can successfully eliminate or reduce pain most of the time, but as with all other surgical procedures for trigeminal neuralgia, pain can recur in some people. While MVD has a high success rate, it also carries risks. There are small chances of decreased hearing, facial weakness, facial numbness, double vision, and even a stroke or death. The risk of facial numbness is less with MVD than with procedures that involve damaging the trigeminal nerve.

- Severing the nerve. A procedure called partial sensory rhizotomy (PSR) involves cutting part of the trigeminal nerve at the

base of brain. Through an incision behind ear, doctor makes a quarter-sized hole in patient's skull to access the nerve. This procedure usually is helpful, but almost always causes facial numbness. And it's possible for pain to recur. If doctor doesn't find an artery or vein in contact with the trigeminal nerve, he or she won't be able to perform an MVD, and a PSR may be done instead.

- Radiation. Gamma-knife radiosurgery (GKR) involves delivering a focused, high dose of radiation to the root of the trigeminal nerve. The radiation damages the trigeminal nerve and reduces or eliminates the pain. Relief isn't immediate and can take several weeks to begin. GKR is successful in eliminating pain more than half of the time. Sometimes the pain may recur. The procedure is painless and typically is done without anesthesia. Because this procedure is relatively new, the long-term risks of this type of radiation are not yet known.

Parkinson's disease

Parkinson's disease is a disorder that affects nerve cells in the part of the brain controlling muscle movement.

People with Parkinson's disease often experience trembling, muscle rigidity, difficulty walking, problems with balance and slowed movements. These symptoms usually develop after age 60, although some people affected by Parkinson's disease are younger than age 50.

Parkinson's disease is progressive, meaning the signs and symptoms become worse over time. But although Parkinson's disease may eventually be disabling, the disease often progresses gradually, and most people have many years of productive living after a diagnosis.

Furthermore, unlike other serious neurological diseases, Parkinson's disease is treatable. One treatment approach is medications. Another involves an implanted device that stimulates the brain. Other approaches involve surgery. Meanwhile, research into other treatments continues.

Signs and symptoms

The earliest symptom of Parkinson's disease can be as subtle as an arm that doesn't swing when patient walks, a mild tremor in the fingers of one hand or soft, mumbling speech that's difficult to understand. he may lack energy, feel depressed or has trouble sleeping. Or he may notice that it takes longer to shower, shave, eat or do other routine tasks.

Other signs and symptoms of Parkinson's disease may include:

- Tremor.
- Slowed motion (bradykinesia). Over time, a slow,

shuffling walk with an unsteady gait and stooped posture.

- Rigid muscles. Muscle stiffness (rigidity) often occurs in limbs and neck.
- Impaired balance. posture may become unstable
- Loss of automatic movements. Blinking, smiling and swinging arms when walk are all unconscious acts that are a normal part of being human.
- Impaired speech. Many people with Parkinson's disease have some trouble speaking, and their voices often become monotonous and very soft.
- Difficulty swallowing. This may develop in the later stages of the disease, but except in rare cases, most people who have trouble swallowing can continue to eat on their own.
- Dementia. In Parkinson's, the onset of dementia is often marked by slowed thought processes and problems with concentration.

Causes

many of the signs and symptoms of Parkinson's disease develop when certain nerve cells (neurons) in an area of the brain called the substantia nigra are damaged or destroyed. Normally, these nerve cells release dopamine — a chemical that transmits signals between the substantia nigra and another part of the brain, the corpus striatum. These signals cause muscles to make smooth, controlled movements.

Everyone loses some dopamine-producing neurons as a normal part of aging. But people with Parkinson's disease lose half or more of neurons in the substantia nigra. Although other brain cells also degenerate, the dopamine-containing cells are critical for movement and so take center stage. Scientists believe Parkinson's disease may result from a combination of genetic and environmental factors. Certain drugs, diseases and toxins also may cause symptoms similar to those of Parkinson's disease.

Screening and **Diagnosis**

A Diagnosis of Parkinson's disease is based on medical history, observations of signs and a neurological examination.

Treatment

Medications

- Start with anticholinergic :

- Anticholinergics. These drugs were the main treatment for Parkinson's disease before the introduction of levodopa. In general, they help control tremor in the early stages of the disease. side effects such as dry mouth, nausea, urine retention — especially in men with an enlarged prostate — and severe constipation.

Anticholinergics can also cause mental problems, including memory loss, confusion and hallucinations. A number of anticholinergic drugs, such as

R / Parkinol (trihexyphenidyl) 2mg tab.
Or: Cogentin (benztropine) 2 mg tab.
Or : Akineton 2 mg tab.

نصف قرص يوميا لمدة أسبوع يزاد بمعدل
نصف قرص كل أسبوع حتى تتحسن الحالة
بحد أقصى ٣ أقراص يوميا

The antihistamine diphenhydramine (Benadryl) and antidepressants such as amitriptyline work much like anticholinergics, and doctors may use them in older adults who can't tolerate anticholinergics themselves.

R / Tryptizol 25 mg tab.
قرص قبل النوم

- Levodopa and carbidopa. Levodopa is a precursor to dopamine that, when given to people with Parkinson's, is converted into dopamine by nerve cells in the brain. The increase in dopamine may reverse many of the disabling symptoms of Parkinson's disease.

  Treatment with dopamine itself isn't possible, because dopamine doesn't cross the body's blood-brain barrier. Levodopa, on the other hand, does cross this barrier, but only a small amount actually reaches the brain. Today levodopa is combined with another drug, carbidopa (Sinemet), that causes more levodopa to get to the brain and helps reduce some of the side effects of this therapy.

R / Sinemet (levodopa + Carbidopa) tab.
نصف-١ قرص ٤-٦ مرات يوميا

Dopamine agonists. Unlike levodopa, these drugs aren't changed into dopamine. Instead, they mimic the effects of dopamine in the brain and cause neurons to react as though sufficient amounts of dopamine were present.

R / Parlodel (bromocriptine) TAB.

نصف قرص مع الأكل مرتين يوميا يزاد
تدريجيا بمعدل نصف قرص أسبوعيا حتى
تنضبط الأعراض و بحد أقصى ٦ أقراص
يوميا .

- Selegiline (Eldepryl). This drug, used with or without carbidopa-levodopa therapy, helps prevent the breakdown of both naturally occurring dopamine and dopamine formed from levodopa. It does this by inhibiting the activity of the enzyme monoamine oxidase B (MAO-B) — the enzyme that metabolizes dopamine in the brain.

R / Jumex (selegiline) tab.
قرص مرتين يوميا صباحا و ظهرا

- Amantadine. Doctors may prescribe this antiviral drug alone to provide short-term relief of mild, early-stage Parkinson's disease. Amantadine may also be added to carbidopa-levodopa therapy for people in the latter stages of Parkinson's disease, especially if they have problems with involuntary movements induced by carbidopa-levodopa (dyskinesia). Side effects include swollen ankles and a purple mottling of the skin.

R / **Adamine 100mg tab.**
كبسولة مرتين يوميا لمدة ٦ أشهر

- Coenzyme Q10. Small structures within cells called mitochondria manufacture substances that are essential for the cells to work normally. One of these substances is coenzyme Q10, which transports electrons during cellular respiration — the process by which cells get their energy from oxygen. People with Parkinson's disease tend to have low levels of coenzyme Q10, and research has suggested that coenzyme Q10 supplements may slow the progression of early-stage Parkinson's disease.

R / **Coenzyme Q 10 . cap.**
كبسولة مرتين يوميا

Surgery:

- Thalamotomy. This procedure has been used for years to reduce tremor in people with Parkinson's disease, although it's not generally helpful for other aspects of parkinsonism. Thalamotomy involves the destruction of small amounts of tissue in the thalamus — a major brain center for relaying messages and transmitting sensations. The surgery can cause slurred speech and sometimes lack of coordination when performed on both sides of the brain. For that reason, it's usually done on only one side of the brain, with the benefits confined to one side of the body.

- Pallidotomy. There has been renewed interest in pallidotomy since improved imaging techniques have allowed surgeons to pinpoint the areas to be treated with greater precision. In this procedure, an electric current is used to destroy a small amount of tissue in the pallidum (globus pallidus), a part of the brain responsible for many symptoms of Parkinson's disease. Pallidotomy may improve tremor, rigidity and slowed movement by interrupting the neural pathway between the globus pallidus and the thalamus. It's especially helpful in countering the involuntary movements caused by drug therapy.
- Deep brain stimulation. A brain implant device is now widely used to help control many of the symptoms of Parkinson's disease. The deep brain stimulator consists of a pacemaker-like unit implanted in the chest wall that transmits

electric impulses through a wire to tiny electrodes inserted deep within the brain. The specific brain center that is targeted, the subthalamic nucleus, controls many aspects of motor function.

Essential tremor

the word "essential" in essential tremor means the disorder isn't linked to other diseases.

Signs and symptoms

Essential tremor often begins gradually. Sometimes it appears during adolescence. More often, though, tremors begin in mid- to late life.

The most common sign is a trembling, up-and-down movement of hands, although arms, legs, head and even tongue and voice box (larynx) also may be affected. Most people have tremors in both hands. Some people have tremors in only one hand, though the tremors often progress to include both hands.

Tremors usually occur only when patient engages in a voluntary movement, such as drinking a glass of water, writing or threading a needle. Actions requiring fine-motor skills — using utensils or small tools, for example — may be especially difficult. Fatigue, anxiety and temperature extremes make the signs worse, but tremors usually disappear when at sleeping or at rest.

Some people have relatively mild tremors throughout their lives, while others develop more severe tremors and increased disability over time. Effects of worsening tremors may include:

- Difficulty holding a cup or glass without spilling
- Difficulty eating normally
- Difficulty putting on makeup or shaving
- Difficulty talking, if voice box or tongue is affected
- Difficulty writing — handwriting may become increasingly large, shaky and illegible
- The inability to perform actions requiring fine-motor skills, such as playing an instrument or drawing

Essential tremor vs. Parkinson's disease

Essential tremor and Parkinson's disease aren't related, and the two conditions differ in key ways:

Difference	Essential tremor	Parkinsonian
When tremors occur ?	when hands are in use.	Prominent when hands are at sides or resting in lap. This type of tremor usually decreases with movement of the hands.

Associated conditions	doesn't cause other health problems	is associated with a stooped posture, slow movement, a shuffling gait, speech problems other than tremor and sometimes memory loss.
Parts of body affected	involve hands, legs, head and voice.	typically affect hands, but not head or voice.

Causes

About half of all cases of essential tremor appear to occur because of a genetic mutation. Researchers have identified two genes that appear to be involved in essential tremor. It's possible that mutations in other genes may also lead to the condition.

Exactly what causes essential tremor in people without a known genetic mutation isn't clear. Doctors do know that the problem occurs in the brain circuits that control movements. Studies using an imaging technique called positron emission tomography (PET) scanning show that certain parts of the brain — including the thalamus — have increased activity in people with essential tremor.

Screening and **Diagnosis**

- Blood, urine and neurological tests to check for problems such as thyroid disease, heavy metal poisoning, drug side effects and Parkinson's disease.

- Physical and neurological exam that may include checking tendon reflexes, muscle strength and tone, ability to feel certain sensations, and posture and coordination.

- The tremor itself may be evaluated in several ways, including performance tests in which patient is asked to write, drink from a glass or hold a piece of paper.

Treatment

Most people with essential tremor don't need treatment beyond reassurance that the condition isn't a sign of a more serious disease. Lifestyle changes — which include getting plenty of rest and avoiding stressful situations and stimulants such as caffeine — may help ease the tremors. Most people with essential tremor find that fatigue, anxiety, sleep deprivation and even temperature extremes make their tremors worse.

If lifestyle changes don't help and tremors are keeping patient from doing the things he enjoy, doctor may recommend these options:

Medications:

- Beta blockers. Normally used to treat high blood pressure, beta blockers, such as propranolol (Inderal), help

relieve tremors in some people. Because beta blockers are especially likely to cause dizziness, confusion and memory loss in older adults, they may be a better choice for younger people.

- Anti-seizure medications. These drugs, especially primidone (Mysoline), may be effective in people who don't respond to beta blockers. The main side effects are drowsiness and flu-like symptoms, which usually disappear within a short time.
- Tranquilizers. such as diazepam (Valium) and alprazolam (Xanax) to treat people whose tremors are made much worse by tension or anxiety. Side effects can include confusion and memory loss. Additionally, these medications should be used with caution because they can be habit-forming.
- Botulinum toxin type A (Botox) injections. Botox injections can improve problems for up to three months at a time. When used to treat hand tremors, Botox can sometimes cause weakness in fingers.

Surgery
Surgery may be an option for people whose tremors are severely disabling and who don't respond to medications. Deep brain stimulation (DBS) is a treatment involving a brain impla nt device called a thalamic stimulator may be appropriate if patient has severe tremors and if medications aren't effective. A pacemaker-like chest unit transmits electrical pulses through a wire to a lead implanted in thalamus. The pulses, which are painless, may interrupt signals from thalamus that help cause tremors. patient turns the pulse generator on and off by passing a magnet over his chest.

Cerebrovacular diseases
1- Stroke
2- Transient ischemic attack

Stroke

What is a stroke?
A stroke, or "brain attack," occurs when a blood vessel in the brain becomes blocked or bursts. The brain cannot store oxygen, so it relies يعتمد on a network of blood vessels to provide it with blood that is rich in oxygen. A stroke results in a lack of blood supply, causing surrounding nerve cells to be cut off from their supply of nutrients and oxygen. When tissue is cut off from its supply of oxygen for more than three to four minutes, it begins to die.

Types of stroke
Strokes can appear as hemorrhagic strokes, ischemic strokes or transient ischemic attacks.

- Hemorrhagic stroke — This type of stroke takes place when a weakened blood vessel in the brain ruptures. A

hemorrhage, or bleeding from the blood vessel, occurs suddenly. The force of blood that escapes from the blood vessel can also damage surrounding brain tissue. Hemorrhagic stroke is the most serious kind of stroke.

- Ischemic stroke — This type of stroke occurs when a blood vessel in the brain develops a clot and cuts off the blood supply to the brain. A blood clot that forms in a blood vessel in the brain is called a "thrombus." A blood clot that forms in another part of the body, such as the neck or lining of the heart, and travels to the brain is called an "embolus." Blood clots often result from a condition called "atherosclerosis," the build-up of plaque with fatty deposits within blood vessel walls.

- Transient ischemic attack (TIA) — A TIA should be treated as seriously as a stroke. A TIA occurs when blood flow to a certain part of the brain is cut off for a short period of time, usually 15 minutes or less. Although TIA is a painless episode, it is an important warning sign that a stroke may follow.

What lasting effects can a stroke cause?

The effects of a stroke depend on the extent and the location of damage in the brain. Among the many types of disabilities that can result from a stroke are:

- Inability to move part of the body (paralysis)
- Weakness in part of the body
- Numbness in part of the body
- Inability to speak or understand words; difficulty communicating
- Difficulty swallowing
- Vision loss
- Memory loss, confusion or poor judgment
- Change in personality; emotional problems

Why does a stroke affect different parts of the body?

Nerve cells in the brain tissue communicate with other cells to control functions including memory, speech and movement. When a stroke occurs, nerve cells in the brain tissue become injured. As a result of this injury, nerve cells cannot communicate with other cells, and functions are impaired. If a stroke occurs on the right side of the brain, the left side of the body is affected, and vice versa.

Act in Time

Stroke is a medical emergency. Every minute counts when someone is having a stroke. The longer blood flow is cut off to the brain, the greater the damage. Immediate treatment can save people's lives and enhance their chances for successful recovery.

What can I do to prevent a stroke?

The best Treatment for stroke is prevention. There are several risk

factors that increase chances of having a stroke:

- High blood pressure
- Heart disease
- Smoking
- Diabetes
- High cholesterol

Stoping smoke & controlling high blood pressure, heart disease, diabetes, or high cholesterol, will greatly reduce chances of having a stroke.

Transient ischemic attack

Short attacks of cerebral ischemia lasting for minutes or hours not more than 24 hrs .

Signs and symptoms

Transient ischemic attacks usually last for a few minutes. Most signs and symptoms disappear within an hour, and all effects disappear within 24 hours. The signs and symptoms of TIA resemble those found early in a stroke and may include:

- Sudden weakness, numbness or paralysis in face, arm or leg, typically on one side of the body
- Slurred or garbled speech or difficulty understanding others
- Sudden blindness in one or both eyes or double vision
- Dizziness, loss of balance or loss of coordination

patient may have more than one TIA, and the recurrent signs and symptoms may be similar or different depending on which area of the brain is involved. If symptoms last longer than 24 hours, it's considered a stroke.

Causes

The cause of a TIA is a temporary decrease in blood supply to part of brain. Most attacks last just a few minutes.

A TIA has the same origins as that of an ischemic stroke. In ischemic strokes, which are the most common type of stroke, a clot blocks the blood supply to part of the brain. But in contrast to a stroke, which involves a more prolonged lack of blood supply and causes some permanent damage to brain tissue, a TIA doesn't leave lasting effects to the brain.

The underlying cause of a TIA often is a buildup of cholesterol-containing fatty deposits called plaques (atherosclerosis) in an artery or one of its branches that supply oxygen and nutrients to the brain. Plaques can decrease the blood flow through an artery or lead to the development of a clot. Other causes include a blood clot moving to the brain from another part of the body, most commonly from the heart.

Risk factors

patient can't change the following risk factors for TIA and stroke. But knowing he is at risk can motivate

him to change his lifestyle to reduce other risks.

- Family history. risk may be greater if one of patient family members has had a TIA or a stroke.
- Age. risk increases as patient get older.
- Sex. Men generally have a higher incidence of stroke than women do, but when it comes to deaths from stroke, the gender difference disappears. Men and women are equally likely to die of stroke.
- Race. Blacks are at greater risk of dying of a stroke than are people of other races. The reason is partly because of their higher prevalence of high blood pressure and diabetes.

Patient can control the following risk factors:

- High blood pressure. Having high blood pressure — 140/90 millimeters of mercury or higher — increases risk of TIA or stroke. Poor diet, lack of exercise and being overweight contribute to this risk factor.
- Cardiovascular disease. Conditions including a previous heart attack, heart valve abnormalities, acute heart valve disease and atrial fibrillation — an irregular and, often, rapid heartbeat — increase risk. patient's heart doesn't pump blood as efficiently with these conditions, or it beats irregularly, allowing blood clots to form in the chambers of his heart that can break off and travel to the brain.
- Cigarette smoking. Smoking contributes to development of cholesterol-containing fatty deposits in arteries (atherosclerosis). Nicotine increases heart rate and blood pressure. The carbon monoxide in cigarette smoke replaces some of the oxygen in blood, decreasing the amount of oxygen delivered to tissues, including brain. Smoking also increases the risk of blood clots.
- Diabetes. Diabetes increases the severity of atherosclerosis — narrowing of the arteries due to accumulation of fatty deposits — and the speed with which it develops.
- Undesirable levels of blood cholesterol. High blood levels of low-density lipoprotein (LDL) cholesterol and triglycerides, or low levels of high-density lipoprotein (HDL) cholesterol increase risk of narrowed or blocked arteries.
- Elevated homocysteine level. Homocysteine — an amino acid and a building block of proteins — naturally occurs in blood. Elevated levels of homocysteine can cause arteries to thicken and scar, making it more likely that cholesterol will clog arteries. People with a history of heart disease may be at an even higher risk of stroke if they have high levels of homocysteine in

their blood. B complex vitamins — B-6, B-12 and folic acid — have been shown to reduce blood levels of homocysteine. However, it isn't known whether taking supplements will reduce the likelihood of a stroke, but it may reduce the risk of atherosclerosis forming in some people with narrowing in their coronary (heart) arteries.

- Blood disorders. Some blood disorders, such as sickle cell anemia, increase the risk of stroke because blood abnormalities can cause blood cells to be stickier and more likely to cling to artery walls, blocking them.

- Sleep apnea. People with this sleep disorder seem to have a higher risk of stroke, which may be because people with sleep apnea also seem to have an increased risk of high blood pressure, a known risk factor for stroke.

- Sedentary lifestyle. People with limited physical activity are at increased risk of stroke. A brisk walk or some other exercise, if done on a regular basis, may lessen risk of stroke.

- Obesity. risk of stroke increases if patient is overweight. Obesity can also increase blood pressure and risk of diabetes.

- Carotid artery disease. doctor may hear a noise (bruit) over the arteries in the front part of neck (carotid arteries) and then may recommend some studies of these arteries. If doctor detects moderate to severe narrowing, risk of stroke may be elevated, even though patient hasn't had symptoms. He may need additional Treatment to prevent a stroke from occurring.

- Peripheral artery disease. In peripheral artery disease, fatty deposits build up on the artery walls in the legs and arms, narrowing the arteries. Anyone with peripheral artery disease has an increased risk of carotid artery disease, which increases stroke risk.

Screening and Diagnosis

- Medical history
- physical and neurological examination.

doctor may hear a sound (bruit) over the carotid artery in neck during an examination. Or doctor may observe cholesterol fragments (emboli) in the tiny blood vessels of retina, at the back of eye, during an eye examination using an ophthalmoscope.

These tests also may help diagnose the cause of a TIA:

- Carotid ultrasonography. A wand-like device (transducer) sends high-frequency sound waves into neck. After the sound waves pass through tissue and back, doctor can analyze images on a screen to look for narrowing or clotting in the carotid arteries.

- Computerized tomography (CT) scanning. CT scanning of head uses X-ray beams to assemble a composite, three-dimensional look at brain.

- Computerized tomography angiography (CTA) scanning. Scanning of the head may also be used to noninvasively evaluate the arteries in neck and brain. CTA scanning uses X-rays, similar to a standard CT scan of the head, but may also involve injection of a contrast material into a blood vessel.

- Magnetic resonance imaging (MRI). This procedure, which uses a strong magnetic field, can generate a composite, three-dimensional view of brain.

- Magnetic resonance angiography (MRA). This is a method of evaluating the arteries in neck and brain. It uses a strong magnetic field, similar to MRI.

- Transesophageal echocardiography (TEE). During this procedure, a flexible probe with a transducer built into it is placed in esophagus — the tube that connects the back of mouth to stomach. Because esophagus is directly behind heart, very clear, detailed ultrasound images can be created, allowing a better view of some things, such as blood clots, that might not be seen clearly in a traditional echocardiography exam.

- Arteriography. This procedure gives a view of arteries in brain not normally seen in X-ray imaging. A radiologist inserts a thin, flexible tube (catheter) through a small incision, usually in groin. The catheter is manipulated through major arteries and into carotid or vertebral artery. Then, the radiologist injects a dye through the catheter to provide X-ray images of the arteries .

Treatment

Once doctor has determined the cause of TIA, the goal of Treatment is to correct the abnormality and prevent a stroke. Depending on the cause of TIA, doctor may prescribe medication to reduce the tendency for blood to clot, or may recommend surgery or a balloon procedure (angioplasty).

Medications

Doctors use several medications to decrease the likelihood of a stroke after a TIA. The medication selected depends on the location, cause, severity and type of TIA. Two frequently prescribed types of drugs are:

- Anti-platelet drugs. These medications make platelets, one of the circulating blood cell types, less likely to stick together. Clot formation is started by sticky platelets when there's an injury to blood vessels. The process is then completed by clotting proteins in blood plasma. The most frequently used anti-platelet medication is aspirin. Aspirin is also the least

expensive Treatment with the fewest potential side effects. An alternative to aspirin is the anti-platelet drug clopidogrel (Plavix), which occasionally is used in combination with aspirin. doctor may also consider prescribing Aggrenox, a combination of low-dose aspirin and the anti-platelet drug dipyridamole, to reduce blood clotting. The way dipyridamole works differs slightly from aspirin. Ticlopidine (Ticlid) is another anti-platelet medication that doctors occasionally recommend.

R / Baby aspirin chew. Tab. 75 mg.
Or : Alexoprine 75 mg inf . tab.

٢ قرص مضغ بعد الغداء لمدة سنة ثم يوقف تدريجيا و يكرر إذا تكررت النوبات

R / Persantin (dipyridamole) 75 mg tab.

قرص قبل الأكل ٣-٤ مرات يوميا لمدة عام ثم يوقف تدريجيا و يكرر إذا تكررت النوبات

Or : Plavix 75 mg tab.
قرص واحد يوميا
Or : Stroka tab. قرص واحد يوميا
Or : Ticlid 250 mg. tab.
قرص مرتين يوميا

- Anticoagulants. These drugs include heparin and warfarin (Coumadin). They affect clotting-system proteins instead of platelet function. Heparin is used short term and warfarin over a longer term. These drugs have a strong anticoagulation effect and therefore require careful monitoring.

R / Heparin 5000 u Amp.

٥-١٠ آلاف وحدة بالوريد فى البداية ثم يعطى بالوريد بالنقطة فى محلول جلوكوز ٥ % بمعدل ١٠٠٠-١٥٠٠ وحدة فى الساعة لمدة ٧-١٠ أيام

N.B. The aim to maintain the activated partial thromboplastin (a PTT) at 2 to 2.5 times the control value .

R / Marevan (warfarin) 5 mg tab.
Or : Dindevan tab.

٢-٣ أقراص يوميا ابتداء من اليوم ٣-٥ من إعطاء الهيبارين و لمدة ٣-٥ أيام ثم تضبط الجرعة طبقاً لزمن البروثرومبين و يستمر العلاج لمدة ٣ أشهر بعد ضبط الأعراض ثم يوقف على مدى بضعة أسابيع و يكرر إذا تكررت الأعراض

Surgery and angioplasty (stenting)
If patient has a moderately or severely narrowed neck (carotid) artery, doctor may suggest carotid endarterectomy This preventive surgery clears carotid arteries of fatty deposits (atherosclerotic plaques) before another TIA or stroke can occur. An incision is made to open the artery, the plaques are removed, and the artery is closed.

In selected cases, a procedure called carotid angioplasty, or stenting, is an option. This procedure involves using a balloon-like device to open a clogged artery and placing a small wire tube (stent) into the artery to keep it open.

Prevention

- Stop smoking. Stopping smoking reduces risk of a TIA or a stroke.
- Limit cholesterol and fat. Cutting back on cholesterol and fat, especially saturated fat, in diet may reduce buildup of plaques in arteries.
- Eat plenty of fruits and vegetables. These foods contain such nutrients as potassium, folate and antioxidants, which may protect against a TIA or a stroke.
- Limit sodium. In case of high blood pressure, avoiding salty foods and not adding salt to food may reduce blood pressure. Avoiding salt may not prevent hypertension. But excess sodium may increase blood pressure in people who are sensitive to sodium.
- Exercise regularly. In case of high blood pressure, regular exercise is one of the few ways can lower pressure without drugs.
- Avoid alcohol. Drink alcohol in moderation, if at all. The recommended limit is no more than one drink daily for women and two a day for men.
- Maintain a healthy weight. Being overweight contributes to other risk factors, such as high blood pressure, cardiovascular disease and diabetes. Losing weight with diet and exercise may lower blood pressure and improve cholesterol levels.
- Don't use illicit drugs. Drugs such as cocaine are associated with an increased risk of a TIA or a stroke.
- Control diabetes. You can manage both diabetes and high blood pressure with diet, exercise, weight control and, when necessary, medication.

Spasmodic Torticollis (wry neck)



Definition Torticollis is a twisted neck, referring to the head being tipped to one side, while the chin الذقن is turned to the other.

Causes, incidence, and risk factors

Torticollis may occur without known cause (idiopathic), be genetic (inherited), or be acquired secondary to damage to the nervous system or muscles. It may develop in childhood or adulthood. Congenital torticollis (present at birth) may be caused by malpositioning of the head in the

uterus, or by prenatal injury of the muscles or blood supply in the neck.

Symptoms

- Enlargement of the neck muscles (possibly present at birth)
- Asymmetry اللاتناظر of an infant's head from sleeping on the affected side
- Elevation of the shoulder on the affected side
- Stiffness of neck muscles
- Limited range of motion
- Headache
- Neck pain
- Head tremor

Signs and tests

Various tests or procedures may be done to rule out possible causes of head and neck pain. A physical examination will show a visible shortening of the neck muscles and the head will tilt تميل toward the affected side while the chin points to the opposite side.

Treatment

Treatment of congenital torticollis involves stretching the shortened neck muscle. Passive stretching and positioning are treatments used in infants and small children. Surgical sectioning of the neck muscle may be done in the preschool years, if other treatment methods fail.

Acquired torticollis is treated by identifying the underlying cause of the disorder. Application of heat, traction الجرّ to the cervical spine, and massage may help relieve head and neck pain. Stretching exercises and neck braces may help with muscle spasms.

Drug **Treatment**s include :-

Anticholinergic drugs : such as
R / **Baclofen tab.** قرص ٣ مرات يوميا .
Or : **Neuril 5 mg tab.** قرص ٣ مرات يوميا

- Injection of botulinum toxin is very effective to temporarily relieve the torticollis, but repeat injections every three months are usually required. Surgical treatments are rarely used.

Expectations (prognosis)

The condition may be easier to correct in infants and children. If the condition becomes chronic, numbness and tingling may develop as nerve roots become compressed in the neck. Botulinum toxin injections often provide substantial relief.

Complications

Some complications include neurological symptoms from compressed nerve roots.

Sciatica

Sciatica is a pain in the leg caused by the irritation of the sciatic nerve. Generally, the pain travels from the back of the thigh to the back of the calf, and also may extend upwards,

to the hip الورك, and downwards to the foot. In addition to pain, there may be numbness and difficulty in moving or controlling the leg., the symptoms are only felt on one side of the body.

Causes of sciatica

Sciatica is generally caused by the compression of a lumbar spine nerve root, and, far less commonly, by compression of the sciatic nerve itself. "True" sciatica, therefore, is caused by compression at the nerve root when it is considered a lumbar radiculopathy.

Did you know that: Sciatica may also be experienced in late pregnancy, primarily resulting from the uterus pressing on the sciatic nerve, and, secondarily, from the muscular tension and / or vertebral compression consequent to carrying the extra weight of the fetus.

The sciatic nerve runs through the piriformis muscle in the buttocks region. When the muscle shortens or spasms due to trauma, it can compress the sciatic nerve. This cause of sciatic symptoms is piriformis syndrome, a major cause of sciatica. The approach to treating Sciatica is to reduce the compressive forces causing the pressure upon the sciatic nerve. This can be accomplished through traction and realignment therapeutic procedures in the case where the sciatica is spinal-related. Manual muscle stretching, massage, and mobilization techniques should be used when the sciatica is piriformis muscle-related. General therapeutic goals include helping the muscles loosen, thereby lessening pain, and to minimize inflammation.

Diagnosis and **Treatment**

Treatment options often differ from patient to patient. Treatment of the underlying cause of the compression is often the most effective course. When the cause is due to a prolapsed or lumbar disc herniation, research has shown that, with supportive treatment to help relieve pain, 90% of disc prolapse will recover with no specific intervention التدخل

Imaging methods such as MR neurography may help diagnosis and treatment of sciatica. MR neurography has been shown to diagnose 95% of severe sciatica patients, while as few as 15% of sciatica sufferers in the general population are diagnosed with disc-related problems. MR neurography is a modified MRI technique using MRI software to provide better pictures of the spinal nerves and the effect of compression on these nerves. MR neurography may help diagnose piriformis syndrome which is another cause of sciatica that does not involve disc herniation. MR neurography has limited geographic availability, but is covered by most insurance as a standard soft-tissue MRI.

Most cases of sciatica can be effectively treated by one or a combination of the following:

Physical therapy and exercise, which generally is best done in a controlled, progressive manner and will include

some combination of stretching, strengthening and cardio conditioning

Massage therapy
Appropriate changes in behaviour, ergonomics and environment (for example cushioning, chair and desk height, sleeping positions).

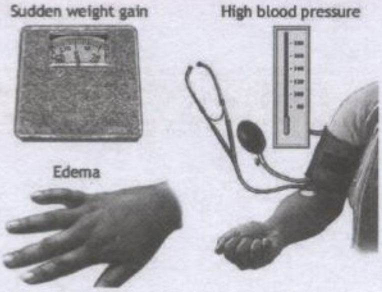
Anti-inflammatory medications (i.e. NSAIDs or oral steroids),
Pain medications (e.g. acetaminophen)

Epidural steroid injections to deliver local anti-inflammatory agents (and possibly a pain medication) directly to the affected area

Alternative medicine
Treatments such as chiropractic manipulation العلاج بتقويم العمود الفقري
or osteopathic manipulation

Chapter – 16 Obstetrics

Pre-eclampsia Toxemia



Alternative names

Toxemia; Pregnancy-induced hypertension

Definition

Preeclampsia is the development of elevated blood pressure and protein in the urine after the 20th week of pregnancy. It may be associated with swelling of the face and hands.

Causes, incidence, and risk factors

The exact cause of preeclampsia is not known. Many unproved theories of potential causes exist, including genetic, dietary, vascular (blood vessel), and autoimmune factors.

Preeclampsia occurs in approximately 8% of all pregnancies. Increased risk is associated with first pregnancies, advanced maternal age, African-American heritage, multiple pregnancies, and a past history of diabetes, high blood pressure, or kidney disease.

Symptoms

- Edema (swelling of the hands and face present upon arising)
- Weight gain
    - In excess of 2 pounds per week
    - Of sudden onset, over 1 to 2 days
- Headaches

Note: Some swelling of the feet and ankles is considered normal with pregnancy.

Additional symptoms that may be associated with this disease:

- Decreased urine output
- Nausea and vomiting
- Facial swelling
- High blood pressure
- Agitation
- Vision changes (flashing lights in the eyes)
- Abdominal pain

Signs and tests

- Documented weight gain
- Swelling in the upper body

- Elevated blood pressure
- Proteinuria (protein noted in urine)
- Thrombocytopenia (platelet count less than 100,000)
- Elevated liver function tests

Preeclampsia may also alter the results of some laboratory tests.

Treatment

Mild & moderate : (B.P. 140 /90 - 160/110 mmHg)

- rest in bed .
– Decrease salt intake .

R / Lexotanil3 mg tab .
R / Valinil 5 mg tab. ١-٢ قرص يوميا
R / Aldomet 250 mg tab.
قرص مرتين يوميا

- Terminate pregnancy at 38 weeks or even 40 weeks .

Severe cases : (B.P. > 160/110 mmHg)

- Hospitalization .
- Rest in a quiet dark room .
- Magnesium sulphate (MgSo4 + Water)
- Antihypertensive e.g.

R / apresoline (Hydralazine) 20 mg . vials .

أمبول يخفف فى ٢٠ سم٣ محلول ملح و يعطى بالوريد مع قياس الضغط كل ٥ دقائق فإذا لم يهبط خلال ٢٠ – ٣٠ دقيقة تكرر نفس الجرعة حتى ينخفض الضغط الإنبساطى إلى أقل من ١٠٠ مم زئبق .

- Termination of pregnancy usually by Caesarean section .

Complications

Preeclampsia may develop into eclampsia, the occurrence of seizures. Fetal complications may occur because of prematurity at time of delivery.

Eclampsia

Alternative names : Toxemia with seizures

Definition Eclampsia is the occurence of seizures (convulsions) in a pregnant woman. The seizures are unrelated to brain conditions and usually happen after the 20th week of pregnancy.

Causes, incidence, and risk factors

The cause of eclampsia is not well understood. Researchers believe a person's genes, diet, blood vessels, and neurological factors may play a role. However, no theories have yet been proven.

Eclampsia follows preeclampsia, a serious complication of pregnancy marked by high blood pressure, weight gain, and protein in the urine.

It is difficult to predict which women with preeclampsia will go on to have seizures. Women with very high blood pressure, headaches, vision changes, or abnormal blood tests

have severe preeclampsia and are at high risk for seizures.

The rate of eclampsia is approximately 1 out of 2000 to 3000 pregnancies. The following increase a woman's chance for preeclampsia:

- First pregnancies
- Teenage pregnancies
- Being 35 or older
- Being African-American
- Multiple pregnancies (twins, triplets, etc.)
- History of diabetes, hypertension, or renal (kidney) disease

Symptoms

- Seizures
- Severe agitation
- Unconsciousness
- Muscle aches and pains

Signs and tests

The health care provider will perform a physical exam and rule out other possible causes of seizures. Blood pressure and breathing rate will be checked and monitored. Blood tests may be performed to check:

- Uric acid
- Creatinine (urine test to check protein levels)
- Liver function
- Platelet count

Treatment

- Hospitalization
- Rest in dark room

R / Apresoline (20 mg amp.) used as in pre-eclampsia .

R / Magnesium sulphate .

٤جم من محلول ٢٠ % بالوريد بمعدل ١ جم فى الدقيقة + ١٠ جم من محلول ٥٠ % بالعضل ثم ٥جم من محلول ٥٠ % بالعضل كل ٤ساعات

Before every dose look for :

a- Volume of urine not less than 100 CC/4hrs .
b- Knee reflex should be present .
c- Respiratory rate not less than 16 / min .

Terminate pregnancy as soon as the patient's conditions allows , either vaginal or by Caesarean section .

Notes : A woman with eclampsia should be continously monitored. Delivery is the treatment of choice for eclampsia in a pregnancy over 28 weeks. For pregnancies less than 24 weeks, the start of labor is recommended, although the baby may not survive.

Prolonging pregnancies in which the woman has eclampsia results in danger to the mother and infant death in approximately 87% of cases.

Women may be given medicine to prevent seizures (anticonvulsant). Magnesium sulfate is a safe drug for both the mother and the baby.

Medication may be used to lower the high blood pressure. The goal is to manage severe cases until 32-34

weeks and mild cases until 36 weeks of the pregnancy have passed. The condition is then relieved with the delivery of the baby. Delivery may be induced if blood pressure stays high despite medication.

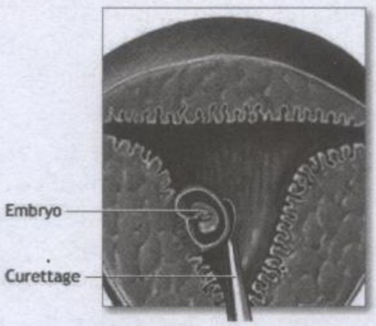
Complications There is a higher risk for placenta seperation (placenta abruptio) with preeclampsia or eclampsia. There may be baby complications due to premature delivery.

Prevention

There is no known prevention. However, it is important for all pregnant women to get early and ongoing medical care. This allows for the early diagnosis and treatment of conditions such as preeclampsia. Treatment of preeclampsia may prevent eclampsia from occurring.

Abortion
(Suction curettage)

Abortion procedure



An abortion is a procedure, either surgical or medical, to end a pregnancy by removing the fetus and placenta from the uterus.

Description A surgical abortion that is performed between 6 and 12 weeks into a pregnancy may be done while the woman is awake. She may be given the option of being sedated by medication through an IV, or having her cervix numbed with an injection of anesthesia.

A surgical abortion for a pregnancy over 12 weeks is usually done while the woman is sedated, although it can also be performed while the woman is awake. The cervical canal is opened (dilated) and a hollow tube is inserted into the uterus.

For abortions later than 12 weeks, the woman may need to come for an appointment the day before her procedure to begin the process of opening the cervix. In this procedure, small sticks called laminaria are placed in the cervix to begin dilation.

A vacuum (suction) machine is used to remove the tissues (fetus and placenta) from the uterus. Medicines such as oxytocin are sometimes given to cause the uterine muscles to contract and reduce bleeding.

An abortion can be performed non-surgically for a pregnancy less than 7 weeks from the first day of the woman's last menstrual period using a combination of medications. The current regimen approved by the FDA includes administration of one dose of Mifepristone (RU486), an antiprogestin, followed two days later

by one dose of Misoprostol, a prostaglandin analogue.

These medications may be given in the doctor's office, after a thorough history and physical is performed. Women who undergo medical abortions experience cramping and bleeding, and pass the pregnancy as though they were having a miscarriage.

Indications There are several reasons an abortion might be considered:

- The woman may not wish to be pregnant (elective termination)
- The woman's health is endangered by pregnancy (therapeutic abortion)
- There is an abnormality in the developing fetus (birth defect, genetic abnormality)

The decision to end a pregnancy is intensely personal. Most health care providers recommend careful counseling before making such a decision.

Abortion - threatened

Alternative names

Threatened miscarriage; Threatened spontaneous abortion

Definition

A threatened abortion is a condition of pregnancy, occurring before the 20th week of gestation, that suggests potential miscarriage الإسقاط may take place.

Causes, incidence, and risk factors

Approximately 20% of pregnant women experience some vaginal bleeding, with or without abdominal cramping, during the first trimester. This is known as a threatened abortion. However, most of these pregnancies go on to term with or without treatment. Spontaneous abortion occurs in less than 30% of the women who experience vaginal bleeding during pregnancy.

In the cases that result in spontaneous abortion, the usual cause is fetal death. Such death is typically the result of a chromosomal or developmental abnormality. Other potential causes include infection, maternal anatomic defects, endocrine factors, immunologic factors, and maternal systemic disease.

Estimates report that up to 50% of all fertilized eggs abort spontaneously, usually before the woman knows she is pregnant. Among known pregnancies, the rate is approximately 10%. These usually occur between 7 and 12 weeks of gestation. Increased risk is associated with women over age 35, women with systemic disease (such as diabetes or thyroid dysfunction), and those with a history of 3 or more prior spontaneous abortions.

Symptoms

- Vaginal bleeding during the first 20 weeks of pregnancy (last menstrual period was less than 20 weeks ago)
- Abdominal cramps may or may not accompany vaginal bleeding

Note: With true miscarriage فشل الحمل, low back pain or abdominal pain (dull to sharp, constant to intermittent) typically occurs and tissue or clot-like material may pass from the vagina.

Signs and tests

Pelvic examination reveals a cervix that is neither thinned (effaced) nor open (dilated). Either of these could suggest impending miscarriage.

- A serum HCG may be performed to confirm that a pregnancy exists.
- Beta HCG (quantitative) test may be repeated over a period of days or weeks to confirm either continued pregnancy or fetal death.
- A CBC may be obtained to determine the degree of blood loss.
- A WBC with differential may be obtained to rule out infection.
- A pregnancy ultrasound is used to detect fetal heartbeat.

This disease may also alter the results of the following tests:

- Serum progesterone
- Beta HCG (quantitative)

Treatment

- Bed rest or pelvic rest (abstaining from intercourse, douching, tampon use) may be recommended .

R / **Valinil 5 mg tab.**
Or : **Calmepam 1.5 Tab.**
١-٢ قرص يوميا

R / **Viterra Cap.**
Or : **Obron plus cap.**
كبسولة صباحا و مساء

N.B. : The use of progesterone is controversial. The potential benefit is the relaxation of smooth muscle, including the muscles of the uterus. However, this may increase the potential risk of an incomplete abortion or an abnormal pregnancy. Unless there is a luteal phase defect, progesterone supplementation should not be used.

Complications

- Spontaneous abortion
- Moderate to heavy blood loss
- Anemia
- Dead fetus syndrome
- Infection

Inevitable abortion

Definition Inevitable abortion is a spontaneous abortion which cannot be stopped.

Symptoms

Symptoms include lower abdominal cramping and bleeding. The uterine

cervix is dilated and fetal or placental material (amniotic fluid) may already have passed out of the body.

Incomplete Abortion

Definition In an incomplete abortion, parts of the fetus or placental material stay inside the uterus.

Symptoms Typical symptoms include vaginal bleeding and lower abdominal cramping.

Treatment In most cases, a surgical procedure called curettage is done to remove the remaining material from the uterus. The goal of this treatment is to prevent prolonged bleeding or infection.

Infected Abortion

Definition An infected abortion occurs when an infection develops in the material from the fetus or placenta or the lining of the uterus (endometrium).

Symptoms

- Fever
- Vaginal bleeding
- Cramping

Treatment : As in incomplete abortion

Habitual abortion

Two or more consecutive spontaneous abortions .

Treatment :

- search for the cause .
- During the pregnancy .
  → Rest in bed .
  → Avoidance of intercourse .

  R/ Utrogestan (Progestrone) Cap .
  كبسولة ٣ مرات يوميا حتى ٦ كبسولات يوميا
- Tocolytic agent :

R / Yutopar tab. نصف قرص ٣ مرات يوميا يزاد تدريجيا حتى ٦ أقراص يوميا

Toxic shock syndrome (septic shock)

Vasodilatation due to liberation of bacterial endotoxins (e.g. satph. Aureus bacteria) leading to relative hypovolemia and acute circulatory failure

Signs and symptoms

The signs and symptoms of toxic shock syndrome may include:

- A sudden high fever.
- Vomiting or diarrhea.
- A rash resembling a sunburn, particularly on palms and soles. After a week or so, the skin on hands and feet generally begins to peel.
- Confusion.
- Muscle aches.

- Redness of eyes, mouth and throat.
- Seizures.
- Headaches.

Treatment

Symptomatic Treatment :

- Restore blood volume with ; Blood transfusion , or colloids , or crystalloids .
- using a vasotonic drug e.g.

R / **Dopamine (200mg/5 ml)amp.**
5-15μg / kg/ by I.V. infusion .

OR / **adrenaline (epinephrine) (1mg/ml) amp.**
0.5 – 1 μg / kg / min .

10 mg (10 amp.) in 250 ml sod. Chloride 0.9% to obtain a concentration of 0.04 kg /ml .
e.g. 1 μg /kg/min for 50 kg body weight
Hourly requirement = 1 (μg) X 50 kg X 60 min
= 3000 μg / hr
i.e. 3 mg / hr = 75 ml /hr

Antibiotic : fo infection
R / **flumox 1 gm vial.**

Constipation durin pregnancy

R / **Laxin tab.** ١-٢قرص عند اللزوم
Or : **Picolax drops .**
٥ نقط بالفم أو على نصف كوب ماء
Or : **Glycerin adult supp.**
لبوسة عند اللزوم

Notes :

- Recurrence of constipation increased in the 3rd. trimester of pregnancy due to the pressure of the uterus on the GIT .
- 1 daily liter of milk is essential nutrition during pregnancy , also due to its fat content decrease the frequency of constipation during pregnancy .
- Any laxative is absolutely contraindicated for ladies suffering from unstable pregnancy { Threatened abortion } .

Vomiting during Pregnancy

R / **Cortigen B6 Adult amp.**
حقنة بالعضل عند اللزوم
R / **Navidoxine (Meclozine + B6) tab.**
Or : **Navoproxin tab.**
١ قرص مرتين يوميا

Notes :

- Metoclopramide (e.g. Primperan tab.) preparations can be used as antiemetic only starting from 2nd. & 3rd. trimester . Not preferred in the 1st. trimester .

Acidity & flatulence during pregnancy

For Flatulence :
R / **Disflatyl (simethicone) chew. tab.** ٢ قرص مضغ ٣ مرات يوميا
Or : **Eucarbon (activated charcoal) tab.** قرص ٣ مرات يوميا

For Acidity :
R / **Mucogel susp.** ملعقة ٣ مرات يوميا
Or : **Fawar fruit . sachets .**
كيس على نصف كوب ماء ٣ مرات يوميا

Notes :
- Flatulence , indigestion & constipation usually occurs during pregnancy due to pressure of the uterus on the GIT .
- Disflatyl & Other preparations that conatin simethicone or dimethicone collect & expel gases from the GIT – (it is safe even in high doses) .
- Activated charcoal are safe anti-flatulent during pregnancy .
- Fawar fruit when added to water produce CO2 which react with HCL of stomach so neutralize acidity .
- Mucogel , Sedomag susp. are safe in pregnancy due to its local effect .

Diarrhea during pregnancy

R / **Kapect susp.** ملعقة ٣ مرات يوميا
For colic : R / **Buscopan tab.**
قرص ١-٢ مرة يوميا

Notes :
- If bacterial diarrhea : Antinal , Ercerfuryl & drotazide Cap. & suspension preparation can be used safely during pregnancy because they contain Nifuroxazide an anti-bacterial agent which not absorbed from the GIT .
- Kapect & pectokal contain pectin / Koalin combination , which adsorb pathogens & microbs form the GIT , help to form semisold stool , they are safe during pregnancy .
- Semecta sachets or Susp. also stop. Diarrhea by adsorption of toxins & microbs from the GIT , not absorbed from the GIT so safe during pregnancy .
- Buscopan contain Hyosine-N-B-bromide like { Buscamol tab. & Nu-spasm tab. } prescriped to stop abdominal colic & safe during pregnancy .

Bacterial upper respiratory tract infection during pregnancy

R / **Broncho syrup.**
Or ; **Guava Syrup.**
ملعقة ٣ مرات يوميا
R / **Amoxicillin 500 Cap.**
Or : **Ampicillin 500 cap.**
كبسولة كل ٨ ساعات

R / **Aironyl Syrup.** ملعقة ٣ مرات يوميا

Notes :
- Broncho & Guava Syrup. Are herbal preparations has mucolytic , expectorant properties so it is safe during pregnancy .
- Also Amoxicillin & ampicillin are safe during pregnancy .

Influenza during pregnancy

R / **Sekem flu sachets .**
كيس على كوب ماء مغلى ٣ مرات يوميا

R / Amoxcillin 500 cap.

كبسولة كل ٨ ساعات لمدة ٣-٥ أيام

R / Novicks inhaler استنشاق للأنف

R / Paracetamol tab.

قرص ٣ مرات يوميا لألم الجسم

R / Cevamol eff. Tab.

قرص فوار على نصف كوب ماء مرتين يوميا

Notes :

- Oral , nasal decongestant and anti-histaminic agents are not allowed during pregnancy .
- Vapozole inhaler & flonaze inhalation cap. , used to relief cold symptoms & throat congestion which may be associated with the common cold . They conatin camphor , eucalyptus & other volatile , 10 drops or cap. Added to boiling water & inhale the vapour to calm cough & reduce congestion .
- Paracetamol safe during pregnancy .

Lactation suppressants

R / Parlodel 2.5 mg tab.

Or : Dopagon tab.

Or : Lactodel tab.

قرص كل ١٢ ساعة لمدة أسبوعين

Notes :

- Parlodel , Dopagon & lactodel contain Bromocriptine used two times daily for 3 days to stop lacation completely .
- Only one tab. Not repeated can be prescribed , just to decrease the volume of milk secretion e.g. in case of breast congestion with milk .
- To avoid Bromocriptin side effects , the starting dose will be half tab. Once daily then half tab. Twice daily then one tab. Twice daily .

Hypertension during pregnancy

Methyldopa Preparations the antihypertensive agent that can be used during pregnancy

Adamat 250	30 Caps.	ADWIC	250mg.
Aldomet 250	30 tab.	Kahira /MSD	250mg.
Aldomet 250	5 amp.	Kahira /MSD	250mg.
Farcodopa 250	20 tab.	Pharco	250mg.
Kadomet 250	20 Tab.	Kahira	250mg.

الجرعة : قرص ٣مرات يوميا

Ecbolics (uterine stimulant)

1- Oxytocin *اوكسى توسين (منشط لانقباض الرحم فقط للمرحلة الاخيرة اثناء الولادة)*

It is a positerior pituitary hormone , it causes contraction of the uterous .

Uses to help delivery at the third stage (last stage) – to maintaine uterus contraction during delivary, & prevent uterine Haemorhage after delivary.

Dose 5 units I.M. or slow I.V. , increased to 10 units when need – in

cesarean operations 5 units given in wall of the uterus.

Oxytocn 5	1 amp.	Medimpex	5 i.u.
Oxytocn 10	1 amp.	Medimpex	10 i.u.
Syntocinon 5	1 amp.	Novartis	5 i.u.
Syntocinon 10	1 amp.	Novartis	10 i.u.

2- Ergometrine

Methergin 0.125	30 tab.	Novartis	Methylergometrine 0.125mg.
Methergin 0.2	5 Amp.	Novartis	0.2mg.

Methergin Mechanism produce sustained contraction, so used in the prevention of postpartium haemorrhage.

Dose : 1mg. i.v. after delivary to restore uterus tonicity- 1tab.3times to restore normal size of uterus

Prostaglandins

Prostaglandin F2 alpha (Dinoprost)

بروستاجلاندين (قابض قوى للرحم لحالات خاصة من الولادة او موت الجنين داخل الرحم) – يعطى بالتقطير الوريدى تحت رقابة طبية شديدة

Dinoprost induces contraction of the uterine muscle at any stage of Pregnancy

Precautions It should be used with caution in patients with Glaucoma, asthma, cardiovascular diseases

C/I be given for induction of labor before the head is engaged, male position of the fetus, previous cesarean section, or obvious fetal distress

Dose 1ml. diluted with 1ml.normal saline given slowly i.v. with rate 8 drops /minute max. 32drops/minute Tell the recommended contraction Pethidine 100mg. & Promethazine 50mg. Given concomitantly to prevent paint , nausea & emesis.

Enzaprost –F 500	1 amp.	Medimpex	500 mcg..
Prostin 500	5amp.X 1ml.	Pharmacia	500 mcg..

Vagiprost 250	4 Vaginal tab.	Adwia	Misoprostol 25 microgm.

Vagiprost used for cervical softening & labour induction.

Dose 25 : 50 mcgm followed by anthor dose after 6 hrs. may be used following assessment of cervical status, myometrial contractability, and foetal condition .

Drugs & pregnancy

Food and Drug Administration, (FDA) assigned risk factors (A,B,C,D,X) to different drugs based on the level of risk the drug poses to the fetus. This stratification helps the physician to classify a drug for use during pregnancy (Table 1 & 2).

Table 1. Principles of classifying drugs into various

categories

Category Description

A

Controlled studies fail to demonstrate a risk to the fetus in the trimester (and there is no evidence of risk in later trimester); the possibility of fetal harm appears remote.

B

Fetal risk not demonstrated in animal studies but there are no controlled studies in pregnant women, or animal reproduction studies have shown an adverse effect that was not confirmed in controlled studies in women during the first trimester (and there is no evidence of risk in later trimesters) .

C

Either animal studies have revealed adverse effects on the fetus (teratogenic, embryocidal, or other) and there are no controlled human studies, or studies in animals and women are not available.

D

There is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g. if the drug is needed in a life-threatening situation or for a serious disease for which safer drugs can not be used or are ineffective).

X

Studies in animals or humans have demonstrated fetal abnormalities or there is evidence of fetal risk based on human experience or both and the risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated in women who are or may become pregnant.

Table-2 Drugs and Pregnancy

X	Ergotamine Tartrate,
Category	Phenobarbital Clomiphene citrate Danazol - Ethinyl estradiol – Levonorgestrel - Oxytoin, Quinine sulphate - Stanozolol - Vitamin A, Warfarin sodium.
D Category	Alprazolam - Amikacin sulfate - Amiodarone, Amitriptyline, Aspirin, Atenolol, Captopril - Colchicine, Doxycycline, Enalapril maleate, Eosinopril, Kanamycin, Lisinopril, Lithium, Lorazepam, Neomycin - Netlimicin, Oxazepam, Ramipril, Tamoxifen, Valproic acid.
C Category	Acetaminophen - Acyclovir - Adenosine - Allopurinol, Aminophyline, Alcohol, Amphetamine - Antihemophilic factors,
	Atropine sulfate, BCG, Calcium injectable, Chloroquine, Chlorpheniramine - Chlorpromazine, Ciprofloxacine - Clofazimine, Clonidine, Clotrimazole, Dapsone, Dexamethasone - , Digoxin, Diltiazem Hydrochloride, Ethionamide, Eurosemide, Gentamycin, Guafenesin, Haloperidol, Heparin, Hydralazine, Interferon, Isoniazid Ketoconazole, Levodopa, Mannitol, Mefenamic acid, Mefloquine, Neostigmine, Nifedipine, Norfloxacin, Prazosin, Rifampicin, Streptokinase, Vitamin K, Zidovudine.
B Category	Amoxycillin, Cefaclor, Cefloperazone, Cephalexin, Ceftiaxone, Cimetidine,

	Clindamycin, Erythromycin, Famotidine, Indomethacin, Isosorbide, Lactulose, Methyldopa, Metronidazole, Nitrofurantoin, Prednisone, Sucralfate, Spironolactone.
A Categ ory	Ferrous sulfate, Levothyroxine, Magnesium sulfate injectable, Vitamin B1, Vitamin B6.

Antimicrobials and Pregnancy

⇨The Following Table lists various antimicrobial agents classified according to their safety and their possible toxic effects on fetus in pregnancy. The terms of reference used are: ⇨Probably safe indicates that no significant risk to fetus has been documented and these agents become first choice if an antimicrobial therapy is required.

Caution indicate that effect on fetus has been documented but can be used at times when benefits of giving outweight associated risks.

Category A. PROBABLY SAFE *الادوية المحتمل امانها اثناء الحمل*

Agent	Adverse effect on fetus	Comments
1. Penicillin	Allergy:Probability of sensitizing the fetus	All the commone B- lactams may be described as safe.
2. Long acting Penicillin	- do -	
3. Ampicillin, Amoxycillin	- do -	No suggestion of increased toxicity
4. Amoxicillin & Clavulanic acid		Little information available Best avoid till more experience is reported.
5. Ticarcillin, Carbenicillin Piperacillin.	- do -	Little information available Best avoid till more experience is reported.
6. Cloxacillin	- do -	
7. Cephalexin & other Cephalo-sporins includinginjectable preparation	- do -	Little information available on newer agents.
8. Sulphonamides	Safe in first trimester Avoid within two days of delivery	Risk is more for highly protein bound agents as sulphafurazole.
9. Trimethoprim		Theoretical risk of megaloblastic anemia.
10. Cotrimoxazole	Kernicterus	Considerable experience of safety in first trimester.
11. Nitrofurantoin		Risky in G-6-PD deficiency
12. Erythromycin stearate		

B. AVOID *الادوية التى يجب تجنبها اثناء الحمل*		
1. Tetracyclines	Discoloration & dysplasia of teeth & bones; cataracts.	Possible hepato-toxicity in mother
2. Streptomycin	Ototoxicity	Little reason to use it as better drugs available
3.Ciprofloxacin, Olfloxacin,Pefloxacin		Little experience in pregnancy
4. Erythromycin estolate		Maternal hepato-toxicity in late pregnancy
5.Clarithromycin, Azithromycin ,Clindamycin, Lincomycin		Maternal pseudo membranous colitis
6. Chloramphenicol	Grey baby syndrome	Possible maternal blood dyscrasias
7. Quinine	Possible abortifacient	--

C - CAUTION *الادوية التى يجب أخذ الحظر منها*		
1.Gentamycin,Amikacin,Tobramycin,Netlimicin	Theoretical risk of Ototoxity	Use only when very specifically indicated
2. Nalidixic acid		Conflicting datas
3. Vancomycin		Safety data not available for humans
4. Metronidazole	Theoretical risk of teratogenecity	Weigh benefit vs risk

Chapter-17 Gynaecology

Vulvovaginitis (Inflamed Vulcae)

Definition : Inflammation of the labia and vaginal area.

Causes , incidence , and risk factors :

Vulvovaginitis is most commonly seen in prepubertal (before puberty) girls . Once a girl reaches puberty and beyond , the vagina is more acidic and this tends to protect them from infections . Vulvovaginitis can be caused by various organisms , chemicals , and environmental factors . Adult women can also develop Vulvovaginitis , the most common cause being candida albicans , a yeast infection . Sexually-transmitted diseases can also cause adult vulvovaginitis .

Nonspecific Vulvovaginitis (that is , no causative organism is identified) can occur in girls with poor genital hygiene and is characterized by a foul-smelling brownish green discharge and irritation .This condition is often associated with an overgrowth of a type of bacteria that is typically found in the stool , or by strep. or by staph. bacteria which may be found in the nose and transferred on the fingers .

Neisseria gonorrhea , the organism that causes gonorrhea , produces a form of vulvovaginitis in young girls . young girls with culture-proved gonococcal vaginitis should be evaluated for sexual abuse because gonococcal vaginitis is considered a sexually-transmitted disease . gardnerella vaginitis is a common causes of vulvovagintis in children . Candida (yeast infection) can also cause recurrent vulvovagintis and may be associated with itching . Bubble baths , tight fitting clothing ,irritating clothing , and non-absorbent clothing may all contribute to the causes of vulvovaginitis .

Prevention : proper fitting and adequately absorbent clothing , combined with good perineal hygiene (genital area) should prevent most cases of vulvovaginitis . proper wiping after using the toilet will also help (girls should always wipe from the front to the back to avoid (dragging إنتقال) bacteria from the rectum to the vaginal area) . The hands should be washed thoroughly before and after using the bathroom.

Symptoms :

- irritation and / or itching of the genital area .
- Inflammation of the labia majora , labia minora , or perineal area .
- Swelling of the labia .
- Vaginal discharge .
- Foul vaginal odor
- discomfort or burning when urinating (may be present) .

Signs and tests :

A culture of the vaginal discharge may demonstrate the organism causing the infection .

Treatment :

The infection is treated with oral antibiotics , antifungals , or similar medications as :

R/ Flumox Cap .كبسولة كل ٦ساعات يوميا

R/ Fungican 150 mg Cap.

Or : Flucoral cap .

Or : Diflucan 150 cap.

كبسولة كل أسبوع

- Improved perineal hygiene is necessary to help healing and to prevent future reinfection.
- Boiling of underclothes .
- Sometimes a topical estrogen cream may be prescribed for short-term use as :

R/ Premarin cream . دهان مساءا

For pin worms :

R/ Fluvermal tab.

Or : vermin tab.

Or : Vermizol tab .

Or : Antiver tab.

قرص واحد

+ Boiling of underclothes .

+ good prineal hygiene .

Trichomonas vaginitis

Symptoms

In women,

- the most common symptoms include ; -
  - yellow, green, or gray vaginal discharge (often foamy) with a strong odor
  - itching or redness in and around the vagina.

- Other symptoms can include :-
  - pain during sexual intercourse,
  - discomfort or swelling in the lower abdomen or groin,
  - the frequent urge to urinate, often with pain and burning. However, 50% of women with T. vaginalis infections have no symptoms.

In men

the most common symptom is urethritis, which includes discharge from the urethra, an urge to urinate frequently, and a burning sensation on urination. Those men without symptoms (asymptomatic carriers) may spread the infection to others.

How is trichomonas transmitted?

The parasite is transmitted through sexual contact.

Diagnosis :

Pelvic exam and lab test. During the pelvic exam, small red sores inside the vagina or on the cervix may appear.

Treatment :

R / Tantum rose vag. Sachets

كيس على لتر ماء دافىء دش مهبلى كل مساء

R / Amrizole vag. Supp.

لبوس مهبلى كل مساء بعد الدش

R / Daktacort cream .

دهان موضعى خارجى مرتين يوميا

R / Flagyl 500 mg (metronidazole) tab.

قرص ٣ مرات يوميا لمدة أسبوع

Or : Fasigyn 500mg(tinidazole)
Tab. ٤ أقراص جرعة واحدة

Treat the patient's sexual partner at the same time , so it should take metronidazole tab.

Prevention :

- People being treated for trichomoniasis should avoid sex until they and their sex partners complete treatment and have no symptoms.
- Or Use a latex condom properly, every time they have sexual intercourse, with every partner.
- If they are infected, their sexual partner(s) should be treated. This will prevent them from getting reinfected.
- They must Don't share swimsuits كسوات السباحة or towels المناشف . The trichomoniasis parasite can live outside the body for up to 45 minutes and can be contracted through contact with moist objects that have the parasite on them.

Trichomoniasis & pregnancy :

Does trichomoniasis cause problems during pregnancy?

- Yes. Trichomoniasis can cause babies to be born early or at a low birth weight (less than five pounds).
- During the first 3 months of pregnancy, many experts feel that women shouldn't take metronidazole (flagyl) because it may hurt تؤذى the baby. However, most doctors feel that metronidazole can be given safely after the end of the first trimester.

Chlamydial infection

Chlamydia is a common term for infection with any bacteria belonging to the phylum Chlamydiae. Chlamydia trachomatis is a major infectious cause of human eye and genital disease. C. trachomatis is naturally found living only inside human cells and is one of the most common sexually transmitted infections in people worldwide

Chlamydia infection of the eye is the most common cause of preventable blindness in the world. Blindness occurs as a complication of trachoma (chlamydia conjunctivitis).

Symptoms

In women :

Almost half of all women who get chlamydia and are not treated will get pelvic inflammatory disease (PID), a generic term for infection of the uterus, fallopian tubes, and/or ovaries. PID can cause scarring inside the reproductive organs, which can later cause serious complications, including chronic pelvic pain, difficulty becoming pregnant, ectopic (tubal)

pregnancy, and other dangerous complications of pregnancy.

Chlamydia is known as the "Silent Epidemic" because in women, it may not cause any symptom and will linger for months or years before being discovered.

Symptoms include: unusual vaginal bleeding or discharge, pain in the abdomen, painful sexual intercourse, fever, painful urination or the urge to urinate more frequently than usual.

In men, chlamydia may not cause any symptoms, but symptoms that may occur include: a painful or burning sensation when urinating, an unusual discharge from the penis, swollen or tender testicles, or fever.

Chlamydia in men can spread to the testicles, causing epididymitis, which can cause sterility if not treated within 6 to 8 weeks.

✍ As many as half of all infants born to mothers with chlamydia will be born with the disease. Chlamydia can affect infants by causing spontaneous abortion; premature birth; conjunctivitis, which may lead to blindness; and pneumonia.

Detection

Diagnostic tests

Nucleic acid amplification tests (NAAT), such as polymerase chain reaction (PCR), transcription mediated amplification (TMA), and the DNA strand displacement assay (SDA) now are the mainstays.

Treatment

Azithromycin 1 gram oral as a single dose, or
Doxycycline 100 milligrams twice daily for seven days.
Tetracycline
Erythromycin

Diseases caused by Chlamydia trachomatis

Chlamydia trachomatis can cause the following conditions:

- Cervicitis
- Conjunctivitis
- Lymphogranuloma venereum
- Pelvic inflammatory disease
- Pneumonia in infants
- Reactive arthritis
- Urethritis
- Rectal infection (proctitis)

Menstrual cramp relief

Information

Ibuprofen and naproxen sodium are common over-the-counter medications that can help relieve menstrual cramps. A heating pad or hot water bottle may also make patient feels better.

Other measures to reduce or prevent cramps include:

- Get regular exercise, such as walk and pelvic rocking exercises.

- Follow a diet rich in complex carbohydrates, like whole grains, fruits, and vegetables -- but low in salt, sugar, alcohol, and caffeine.
- Practice relaxation techniques like meditation or yoga.

Amenorrhea

Amenorrhea is the absence of a menstrual period.

Primary amenorrhea is when a young woman has not yet had a period by age 16.

Secondary amenorrhea describes someone who used to have a regular period but then it stopped for at least three months (this can include pregnancy).

Signs & Symptoms :

The main sign of amenorrhea is missing a menstrual period.

Regular periods are a sign of overall good health. Missing a period may mean that she is pregnant or that something is going wrong.

Amenorrhea itself is not a disease, but is usually a symptom of another condition. Depending on that condition, a woman might experience other symptoms, such as headache, vision changes, hair loss, or excess facial hair.

Causes :

Amenorrhea is a symptom of a variety of conditions, ranging from not serious to serious.

Primary Amenorrhea

- Chromosomal or genetic abnormalities can cause the eggs and follicles involved in menstruation to deplete too early in life.
- Hypothalamic or pituitary diseases and physical problems, such as problems with reproductive organs, can prevent periods from starting.
- Moderate or excessive exercise, eating disorders (such as anorexia nervosa), extreme physical or psychological stress, or a combination of these can disrupt the normal menstrual cycle.

Secondary amenorrhea

This problem is much more common than primary amenorrhea. Common causes include many of those listed for primary amenorrhea, as well as pregnancy, certain contraceptives, breastfeeding, mental stress, and certain medications.

Hormonal problems involving the hypothalamus, pituitary, thyroid, ovary, or adrenal

glands can also cause amenorrhea.
Women who have very low body weight sometimes stop getting their periods as well.
Women with premature ovarian failure stop getting regular their periods before natural menopause.

Treatment :

Exclude Pregnancy before any medication .

Treatment for amenorrhea depends on the underlying cause. Sometimes lifestyle changes can help if weight, stress, or physical activity is causing the amenorrhea.

Medication :

R / **Ethinyl oestradiol 50 µg tab.**
قرص قبل النوم يوميا لمدة ٣ أسابيع ثم راحة أسبوع
و يكرر العلاج لمدة ٣ شهور

R / **Lutone Amp.**
حقنة بالعضل يوم بعد يوم فى الأسبوع الثالث من الأقراص

N.B. R / **Parlodel (bromocriptine)** : used in prolactin related infertility & amenorrhea .
نصف إلى قرص ٣ مرات يوميا أثناء الوجبات

Dysmenorrhea (Painful Menstrual Periods)

Why do some women have painful periods?

Most women have some pain with their periods. The pain can start just before the period or at the beginning of the period. It can last 1 to 3 days. The pain can be bad enough to keep from doing normal activities.

Painful periods, or dysmenorrheal , are not usually serious. However, sometimes painful periods can be caused by an infection or by ovarian cysts (fluid-filled sacs in the ovary). Pain also can be caused by endometriosis. This is a problem with the lining of the uterus.

Treatment :

- Using heating pads وسادات or taking a warm bath.
- Medication : to relive pain e.g.

R / **Naprosyn tab.**
قرص ٣ مرات يوميا بعد الأكل

- Using birth control pills or a birth control shot (Contraceptive) . These medicines can make periods less painful. E.g

R / **Nordette tab.**
قرص واحد يوميا لمدة ٢١ يوم من بداية اليوم الأول للدورة ثم راحة اسبوع ثم تكرر الدورة

Menorrhagia (heavy menstrual bleeding)

Almost every woman at some time in her reproductive life experiences heavy bleeding during her menstrual period. Some women have heavy periods almost every cycle.

Menorrhagia is the medical term for excessive or prolonged menstrual bleeding or both. The condition is also known as hypermenorrhea.

The menstrual cycle isn't the same for every woman. Normal menstrual flow occurs about every 28 days, lasts four to five days and produces a total blood loss of 60 to 250 milliliters (4 tablespoons to about 1 cup). The period may be regular or irregular, light or heavy, painful or pain-free, long or short and still be considered normal.

Signs and symptoms

- Menstrual flow that soaks through one or more sanitary pads or tampons فوط صحية every hour for several consecutive hours
- The need to use double sanitary protection to control menstrual flow
- The need to change sanitary protection during the night
- Menstrual period that lasts longer than seven days
- Menstrual flow that includes large blood clots
- Heavy menstrual flow that interferes with regular lifestyle
- Constant pain in lower abdomen during menstrual period
- Irregular menstrual periods
- Tiredness, fatigue or shortness of breath (symptoms of anemia)

Causes

In some cases the cause of heavy menstrual bleeding is unknown, but a number of conditions may cause menorrhagia. Common causes include:

- Hormonal imbalance. In a normal menstrual cycle, a balance between the hormones estrogen and progesterone regulates the buildup of the lining of the uterus (endometrium), which she sheds during menstruation. If a hormonal imbalance occurs, the endometrium develops in excess and eventually sheds by way of heavy menstrual bleeding. Hormonal imbalance occurs most often in adolescent girls المراهقات experiencing their menstrual periods for the first time and in women approaching menopause سن اليأس. Menorrhagia caused by certain conditions involving hormonal imbalance, such as thyroid disease, often can be controlled with hormone medications. However, improper use of hormone medications can also be a direct cause of menorrhagia.

- Uterine fibroids. These noncancerous (benign) tumors of the uterus appear during childbearing years. Uterine fibroids may cause heavier than normal or prolonged menstrual bleeding.

Together, hormonal imbalance and uterine fibroids account for about 80 percent of all cases of menorrhagia. Other causes may include:

- Polyps. The development of small benign growths on the uterine wall (uterine polyps) may cause heavy or prolonged menstrual bleeding. Polyps of the uterus most commonly occur in women of reproductive age as the result of excessive hormone production or consumption and can lead to bleeding not associated with menstruation (spotting).
- Ovarian cysts. These fluid-filled sacs or pockets occur within or on the ovary. Ovarian cysts are often benign and rarely cause menstrual irregularities, including menorrhagia.
- Dysfunction of the ovaries. Failure of the ovaries to produce, mature or release eggs (anovulation) may cause hormonal imbalance and result in menorrhagia.
- Adenomyosis. This condition occurs when glands from the endometrium become embedded in the uterine muscle, often causing heavy bleeding and pain. Adenomyosis is most likely to develop if she is a middle-aged woman who has had many children.
- Intrauterine device (IUD). Menorrhagia is a well-known side effect of using an intrauterine device for birth control. When an IUD is the cause of excessive menstrual bleeding, women'll often needs to remove it. Light spotting is normal with the use of an IUD and, with no other symptoms present, is most likely insignificant.
- Pregnancy complications. A single heavy period that's late may be due to a miscarriage. If bleeding occurs at the usual time of menstruation, however, miscarriage is less likely to be the cause. An ectopic pregnancy, implantation of a fertilized egg within the fallopian tube instead of the uterus, also may cause menorrhagia.
- Cancer. Rarely, certain female reproductive cancers may cause menorrhagia. Uterine cancer, ovarian cancer and cervical cancer can cause excessive vaginal bleeding.
- Medications. Certain drugs, including those that prevent blood clotting (anticoagulants) and anti-inflammatory medications, can contribute to heavy or prolonged menstrual bleeding.
- Other medical conditions. A number of other medical conditions may cause or

increase risk of menorrhagia. Pelvic inflammatory disease (PID), thyroid problems, endometriosis, lupus, liver or kidney disease, some uncommon blood disorders, certain cancers and chemotherapy may cause menorrhagia.

Screening and Diagnosis

- Blood tests. A sample of blood is evaluated for any abnormalities due to excessive blood loss during menstruation.
- Pap test. doctor collects cells from cervix for microscopic examination to detect infection, inflammation or changes that may be cancerous or may lead to cancer.
- Endometrial biopsy. a sample of tissue is taken from the inside of uterus to be examined under a microscope.
- Ultrasound scan. This method of scan uses sound waves to produce pictures of uterus, ovaries and pelvis.
- Sonohysterogram. This ultrasound scan is done after fluid is injected through a tube into the uterus by way of vagina and cervix. This allows doctor to look for problems in the lining of uterus.
- Hysteroscopy. A tiny tube with a light is inserted through vagina and cervix into the uterus, which allows doctor to see the inside of uterus.
- Dilation and curettage (D and C). In this procedure, doctor opens (dilates) cervix and then inserts a spoon-shaped instrument (curet) into uterus to collect tissue from the lining of uterus to be examined in the laboratory.
- Hysterosalpingography. A dye is injected into uterus and fallopian tubes through the cervix, and X-rays are taken to determine the shape and size of uterus and fallopian tubes.

Complications

Iron deficiency anemia - Severe pain - Toxic shock syndrome.

Treatment

Drug therapy for menorrhagia may include:

- Iron supplements. For anemia
- Prostaglandin inhibitors :

R / **Brufen 400 tab.**
قرص كل ٨ ساعات

- Oral contraceptives. Aside from providing effective birth control, oral contraceptives can help regulate ovulation and reduce episodes of excessive or prolonged menstrual bleeding.

R / Nordette tab.
قرص واحد يوميا لمدة ٢١ يوم

- Progesterone. The hormone progesterone can help correct hormonal imbalance and reduce menorrhagia.

+ Change or stop drug-induced menorrhagia .

Treatment options include:

- Dilation and curettage (D and C).
- Operative hysteroscopy.
- Endometrial ablation الإستئصال. Using ultrasonic energy, doctor permanently destroys the entire lining of uterus (endometrium). After endometrial ablation, most women have normal menstrual flow. However, some women have little or no menstrual flow after the procedure. Endometrial ablation negatively affects ability to become pregnant.
- Endometrial resection الاستئصال الجزئي. This surgical procedure uses an electrosurgical wire loop to remove the lining of the uterus. Both endometrial ablation and endometrial resection benefit women who have very heavy menstrual bleeding but don't have other underlying uterine problems such as large fibroids, polyps or cancer. Like endometrial ablation, this procedure negatively affects ability to she becomes pregnant.
- Hysterectomy. This surgical removal of the uterus and cervix is a permanent procedure that causes sterility and cessation of menstrual periods. she'll need general anesthesia and hospitalization. Additional removal of the ovaries (total hysterectomy) may cause premature menopause in younger women. Because hysterectomy is permanent, be sure she wants this Treatment before going ahead with surgery.

Menopause

it's a transition that can start in 30s or 40s and last into 50s or even 60s. Once women hasn't had a period for 12 consecutive months,she is reached menopause.

Menopause is a natural biological process, not a medical illness. Although it's associated with hormonal, physical and psychosocial changes in life, menopause isn't the end of youth or of sexuality. Several generations ago, few women lived beyond menopause.

Hormone therapy (HT) has been widely used in recent decades to relieve the signs and symptoms of menopause and to prevent diseases associated with aging.

Estrogen therapy is still a safe, short-term option for some women, but numerous other therapies also are available to help women to manage menopausal symptoms and stay healthy during this important phase of her life.

Signs and symptoms

- Irregular periods. menstrual periods may stop suddenly, or gradually get lighter or heavier and then stop.
- Decreased fertility. When ovulation begins to fluctuate يتقلب, women is less likely to become pregnant. Until she hasn't had a period for a year, however, pregnancy is still possible.
- Vaginal and urinary changes. As estrogen level declines, the tissues lining vagina and urethra — the opening to bladder — become drier, thinner and less elastic. With decreased lubrication women may experience burning or itching, along with increased risk of infections of urinary tract or vagina. These changes may make sexual intercourse uncomfortable or even painful. women may feel the need to urinate more frequently or more urgently, and experience urinary incontinence.
- Hot flashes. As estrogen level drops, blood vessels may expand rapidly, causing skin temperature to rise. This can lead to a feeling of warmth that moves upward from chest to shoulders, neck and head. Sweating may occur, and as the sweat evaporates from skin, patient may feel chilled, weak and slightly faint. patient face might look flushed, and red blotches may appear on chest, neck and arms. Most hot flashes last from 30 seconds to several minutes .
- Sleep disturbances and night sweats.
- Changes in appearance. Many women gain a modest amount of weight — about 5 pounds on average — during the menopausal transition. Women may notice a loss of fullness in breasts, thinning hair and wrinkles تجاعيد in skin. If patient previously experienced adult acne, it may become worse. Although estrogen level drops, body continues to produce small amounts of the male hormone testosterone. As a result, patient may develop coarse hair on chin, upper lip, chest and abdomen.
- Emotional and cognitive changes. patient may experience irritability, fatigue, decreased memory and diminished concentration as she approach menopause. These symptoms have sometimes been attributed to hormonal fluctuations.

Causes

Menopause begins naturally when women ovaries start making less estrogen and progesterone. During reproductive years, these hormones regulate monthly cycles of ovulation and menstruation. In late 30s, the amount of progesterone the body produces diminishes, and the remaining eggs from ovaries are less likely to be fertilized. Eventually menstrual periods stop, and women can no longer become pregnant. Because this process takes place over years, menopause is commonly divided into the following two stages:

- Perimenopause. This is the time women begin experiencing menopausal signs and symptoms, even though she is still ovulating.
- Postmenopause. Once 12 months have passed since women last period, she is reached menopause. her ovaries produce much less estrogen and progesterone, and they don't release eggs. The years that follow are called postmenopause.

Risk factors

Menopause is usually a natural process. But certain surgical or medical Treatments can bring on menopause earlier than expected. These include:

- Hysterectomy. A hysterectomy that removes uterus, but not ovaries, usually doesn't cause menopause. Although women no longer has periods, her ovaries still release eggs. But an operation that removes both her uterus and ovaries (total hysterectomy and bilateral oophorectomy) does cause menopause. There's no perimenopausal phase. Instead, her periods stop immediately, and she is likely to have hot flashes and other menopausal signs and symptoms.
- Chemotherapy and radiation therapy. These cancer therapies can induce menopause, causing symptoms such as hot flashes during the course of treatment or within three to six months.
- Premature ovarian failure. Approximately 1 percent of women experience menopause before age 40. Premature menopause may result from genetic factors or autoimmune disease, but often no cause can be found.

Screening and Diagnosis

The signs and symptoms of menopause are enough to tell most women they have begun going through the transition.

- Check level of follicle-stimulating hormone (FSH) and estrogen (estradiol) with a blood test. As menopause occurs, FSH levels increase and estradiol levels decrease. doctor may also recommend a blood test to determine level of thyroid-stimulating hormone,

because hypothyroidism can cause symptoms similar to those of menopause.

Complications

Cardiovascular disease – Osteoporosis - Urinary incontinence - Weight gain.

Treatment

Menopause itself requires no medical treatment. Instead, treatments focus on relieving signs and symptoms and on preventing or lessening chronic conditions that may occur with aging. treatments include:

- Hormone therapy (HT).
  R / Premarin 0.625 tab.
  Or : klimadynon tab.

قرص واحد يوميا من اليوم الأول حتى يوم ٢٥
مع الفحص الدورى للثدى و عينة من بطانة الرحم
سنويا

R / Cidolut nor tab. قرص مرتين يوميا
لمدة ٧ أيام من الأسبوع الأخير من الدورة

- Low-dose antidepressants. may decrease hot flashes
  R / prozac cap. كبسولة واحدة يوميا
  R / Cipralex tab. قرص واحد يوميا

- Clonidine (Catapres, others). Clonidine, a pill or patch typically used to treat high blood pressure, may significantly reduce the frequency of hot flashes .

- Bisphosphonates. Doctors may recommend these nonhormonal medications, which include alendronate (Fosamax) and risedronate (Actonel), to prevent or treat osteoporosis. These medications effectively reduce both bone loss and risk of fractures .
  R / Actonel 35 mg Tab.

قرص واحد أسبوعيا قبل الإفطار بساعة مع كوب
ماء كبير مع الثبات فى وضع قائم لمدة ساعة

- Selective estrogen receptor modulators (SERMs). includes raloxifene (Evista). Raloxifene mimics estrogen's beneficial effects on bone density in postmenopausal women, Hot flashes are a common side effect of raloxifene, and shouldn't be used in case of blood clots history .

- Vaginal estrogen. To relieve vaginal dryness, estrogen can be administered locally using a vaginal tablet, ring or cream. This treatment releases just a small amount of estrogen locally to vaginal tissue, and can help relieve vaginal dryness, discomfort with intercourse and some urinary symptoms.

R / Premarin vaginal Cream .
دهان مهبلى عند اللزوم

Infertility

inability to conceive a child within one year. Infertility differs from

sterility. Being sterile means you're unable to conceive a child.

Causes

Every month the pituitary gland in a woman's brain sends a signal to her ovaries to prepare an egg for ovulation. The pituitary hormones — follicle-stimulating hormone (FSH) and luteinizing hormone (LH) — are involved in stimulating the ovaries to bring an egg to ovulation. A large boost in LH carries a message to the ovarian follicle to release its egg (ovulate). A woman is most fertile at the time of ovulation — around day 14 of her menstrual cycle — although the exact time of ovulation varies among women due to different lengths of menstrual cycles.

The egg is then captured by a fallopian tube and is viable for about 24 hours, but its best chance of being fertilized is within the first 12 hours following ovulation. For pregnancy to occur, a sperm must unite with the egg in the fallopian tube during this time. Sperm are capable of fertilizing the egg for up to 72 hours and must be present in the fallopian tube at the same time as the egg for conception to occur. If fertilized, the egg moves into the uterus two to four days later. There it attaches to the uterine lining and begins a nine-month process of growth.

Causes of male infertility

Abnormal sperm production or function.

- Impaired shape and movement of sperm. If the shape and structure (morphology) of the sperm are abnormal or the movement (motility) is impaired, sperm may not be able to reach the egg.
- Absent sperm production in testicles.
- Low sperm concentration. A normal sperm concentration is greater than or equal to 20 million sperm per milliliter of semen. A count of 10 million or fewer sperm per milliliter of semen indicates low sperm concentration (subfertility). A count of 40 million sperm or higher per milliliter of semen indicates increased fertility.
- Varicocele. A varicocele is a varicose vein in the scrotum that may prevent normal cooling of the testicle and raise testicular temperature, preventing sperm from surviving.
- Undescended testicle (cryptorchidism). cause mild to severely impaired sperm production. Because the testicles are exposed to the higher internal body temperature compared to the temperature in the scrotum, sperm production may be affected.
- Testosterone deficiency (male hypogonadism). Infertility can result from disorders of the

testicles themselves, or an abnormality affecting the hypothalamus or pituitary glands in the brain that produce the hormones that control the testicles.

- Klinefelter's syndrome. In this disorder of the sex chromosomes, a man has two X chromosomes and one Y chromosome instead of one X and one Y **(XXY)**. This causes abnormal development of the testicles, resulting in low or absent sperm production. Testosterone production also may be lower.
- Infections. Infection may temporarily affect sperm motility.

Impaired delivery of sperm. Problems with the delivery of sperm from the penis into the vagina can cause infertility. These may include:

- Sexual issues. Often treatable, problems with sexual intercourse or technique may affect fertility. Difficulties with erection of the penis (erectile dysfunction), premature ejaculation, painful intercourse (dyspareunia), or psychological or relationship problems can contribute to infertility. Use of lubricants such as oils or petroleum jelly can be toxic to sperm and impair fertility.
- Retrograde ejaculation. القذف الرجعي This occurs when semen enters the bladder during orgasm rather than emerging out through the penis. Various conditions can cause retrograde ejaculation including diabetes, bladder, prostate or urethral surgery, and the use of psychiatric or antihypertensive drugs.
- Blockage of epididymis or ejaculatory ducts. Some men are born with blockage of the part of the testicle that contains sperm (epididymis) or ejaculatory ducts. And some men who seek treatment for infertility lack the tubes that carry sperm (vasa deferentia).
- No semen (ejaculate). The absence of ejaculate may occur in men with spinal cord injuries or diseases. This fluid transports sperm through the penis into the vagina.
- Misplaced urinary opening (hypospadias). A birth defect عيب منذ الولادة can cause the urinary (urethral) opening to be abnormally located on the underside of the penis. If not surgically corrected, this condition can prevent sperm from reaching the cervix.
- Anti-sperm antibodies. Antibodies that target sperm and weaken or disable them usually occur after surgical blockage of part of the vas deferens for male sterilization (vasectomy). Presence of these antibodies may complicate the reversal of a vasectomy.

- Cystic fibrosis. Men with cystic fibrosis often have missing or obstructed vasa deferentia.

General health and lifestyle

- Emotional stress.
- Malnutrition. Deficiencies in nutrients such as vitamin C, selenium, zinc and folate may contribute to infertility.
- Obesity.
- Cancer and its treatment. Both radiation and chemotherapy treatment for cancer can impair sperm production, sometimes severely. Removal of one or both testicles due to cancer also may affect male fertility.
- Alcohol and drugs. Anabolic steroids, for example, which are taken to stimulate muscle strength and growth, can cause the testicles to shrink and sperm production to decrease.
- Other medical conditions. A severe injury or major surgery can affect male fertility. Certain diseases or conditions, such as diabetes, thyroid disease, HIV/AIDS, Cushing's syndrome, anemia, heart attack, and liver or kidney failure, may be associated with infertility.
- Age. A gradual decline in fertility is common in men older than 35.

Environmental exposure :- Specific causes include:

- Pesticides and other chemicals. Herbicides and insecticides may cause female hormone-like effects in the male body and may be associated with reduced sperm production. Exposure to such chemicals also may contribute to testicular cancer.
- Testicular exposure to overheating. Frequent use of saunas or hot tubs can elevate core body temperature. This may impair sperm production and lower sperm count.
- Substance abuse. Cocaine or heavy marijuana use may temporarily reduce the number and quality of sperm.
- Tobacco smoking. Men who smoke may have a lower sperm count than do those who don't smoke.

Causes of female infertility

Fallopian tube damage or blockage. This condition usually results from inflammation of the fallopian tube (salpingitis). Chlamydia is the most frequent cause. Tubal inflammation may go unnoticed or cause pain and fever.

Tubal damage with scarring is the major risk factor of a pregnancy in which the fertilized egg is unable to make its way through the fallopian tube to implant in the uterus (ectopic

pregnancy). One episode of tubal infection may cause fertility difficulties. The risk of ectopic pregnancy increases with each occurrence of tubal infection.

Endometriosis. Endometriosis occurs when the tissue that makes up the lining of the uterus grows outside of the uterus. This tissue most commonly is implanted on the ovaries or the lining of the abdomen near the uterus, fallopian tubes and ovaries. These implants respond to the hormonal cycle and grow, shed and bleed in sync مصاحبة with the lining of the uterus each month, which can lead to scarring and inflammation. Pelvic pain and infertility are common in women with endometriosis.

Infertility in endometriosis also may be due to:

- Ovarian cysts خراجات (endometriomas). Ovarian cysts may indicate advanced endometriosis and often are associated with reduced fertility. Endometriomas can be treated with surgery.
- Scar tissue. Endometriosis may cause rigid webs of scar tissue between the uterus, ovaries and fallopian tubes. This may prevent the transfer of the egg to the fallopian tube.

Ovulation disorders. Disruption in the part of the brain that regulates ovulation (hypothalamic-pituitary axis) can cause deficiencies in luteinizing hormone (LH) and follicle-stimulating hormone (FSH). Even slight irregularities in the hormone system can affect ovulation.

Elevated prolactin (hyperprolactinemia). The hormone prolactin stimulates breast milk production. High levels in women who aren't pregnant or nursing may affect ovulation. An elevation in prolactin levels may also indicate the presence of a pituitary tumor. In addition, some drugs can elevate levels of prolactin. Milk flow not related to pregnancy or nursing (galactorrhea) can be a sign of high prolactin.

Polycystic ovary syndrome (PCOS). An increase in androgen hormone production causes PCOS. In women with increased body mass, elevated androgen production may come from stimulation by higher levels of insulin. In lean women, the elevated levels of androgen may be stimulated by a higher ratio of luteinizing hormone (LH). Lack of menstruation (amenorrhea) or infrequent menses (oligomenorrhea) are common symptoms in women with PCOS.

In PCOS, increased androgen production prevents the follicles of the ovaries from producing a mature egg. Small follicles that start to grow but can't mature to ovulation remain within the ovary. A persistent lack of ovulation may lead to mild enlargement of the ovaries.

Without ovulation, the hormone progesterone isn't produced and estrogen levels remain constant.

Elevated levels of androgen may cause increased dark or thick hair on the chin, upper lip or lower abdomen as well as acne and oily skin.

Early menopause (premature ovarian failure). Early menopause is the absence of menstruation and the early depletion of ovarian follicles before age 35. Although the cause is often unknown, certain conditions are associated with early menopause, including:

- Autoimmune disease. The body produces antibodies to attack its own tissue, in this case the ovary. This may be associated with hypothyroidism (too little thyroid hormone).
- Radiation or chemotherapy for the treatment of cancer.
- Tobacco smoking.

Benign uterine fibroids. Fibroids are benign tumors in the wall of the uterus and are common in women in their 30s. Occasionally they may cause infertility by interfering with the contour of the uterine cavity, blocking the fallopian tubes.

Pelvic adhesions. Pelvic adhesions are bands of scar tissue that bind organs after pelvic infection, appendicitis, or abdominal or pelvic surgery. They may limit the functioning of the ovaries and fallopian tubes and impair fertility. Scar tissue formation inside the uterine cavity after a surgical procedure may result in a closed uterus and ceased menstruation (Asherman's syndrome). This is most common following surgery to control uterine bleeding after giving birth.

Other causes. A number of other causes can lead to infertility in women:

- Medications. Temporary infertility may occur with the use of certain medications. In most cases, fertility is restored when the medication is stopped.
- Thyroid problems. Disorders of the thyroid gland, either too much thyroid hormone (hyperthyroidism) or too little (hypothyroidism), can interrupt the menstrual cycle and cause infertility.
- Cancer and its treatment. Certain cancers — particularly female reproductive cancers — often severely impair female fertility. Both radiation and chemotherapy may affect a woman's ability to reproduce. Chemotherapy may impair reproductive function and fertility more severely in men than in women.
- Other medical conditions. Medical conditions associated with delayed puberty or amenorrhea, such as Cushing's disease, sickle cell disease, HIV/AIDS, kidney disease and diabetes, can affect a woman's fertility

Screening and diagnosis

Tests for men.

- General physical examination. examination of genitals and questions concerning medical history, illnesses and disabilities, medications and sexual habits.
- Semen analysis. for quantity, color and presence of infections or blood & to determine the number of sperm present and any abnormalities in the shape and movement (motility) of the sperm.
- Hormone testing. A blood test to determine the level of testosterone and other male hormones is common.

Tests for women

- Confirmation of ovulation. A blood test is sometimes performed to determine the levels of hormones involved in successful ovulation.
- Hysterosalpingography. This test evaluates the condition of uterus and fallopian tubes. Fluid is injected into uterus, and an X-ray is taken to determine whether the fluid progresses out of the uterus and into fallopian tubes and general peritoneal cavity. Blockage or problems often can be located and may be corrected with medication or surgery.
- Laparoscopy. The most common problems identified by laparoscopy are endometriosis and scarring. doctor can also detect blockages or irregularities of the fallopian tubes and uterus.
- Urinary luteinizing hormone (LH) detector kits. A number of at-home kits are available to test LH level. Although these kits may be helpful, they also can be inaccurate and misleading.
- Ovarian reserve testing. to determine the potential effectiveness of the eggs after ovulation. This approach often begins with hormone testing early in a woman's menstrual cycle.

Treatment

Fertility drugs (ovulation induction)

- Clomiphene citrate (Clomid). This drug is taken orally and stimulates ovulation in women who have PCOS or other ovulatory disorders. It causes the pituitary gland to release more FSH and LH, which stimulate the growth of an ovarian follicle containing an egg.
- Human menopausal gonadotropin, or hMG (Pergonal). This injected prescription medication is for women who don't menstruate on their own due to the failure of the pituitary gland to stimulate ovulation. Unlike clomiphene, which stimulates the pituitary gland, hMG and

other gonadotropins directly stimulate the ovaries. This drug contains both FSH and LH.

- Follicle-stimulating hormone, or FSH (Gonal-F). FSH is essentially hMG without the LH. Like hMG, it works by stimulating the ovaries to mature egg follicles.
- Human chorionic gonadotropin, or hCG (Pregnyl). Used in combination with clomiphene, hMG and FSH, this drug stimulates the follicle to release its egg (ovulate).
- Gonadotropin-releasing hormone (Gn-RH) analogs. This treatment is for women with irregular ovulatory cycles or who ovulate prematurely (before the lead follicle is mature enough) during hMG treatment. Gn-RH analogs deliver constant Gn-RH to the pituitary gland, which alters hormone production, so that a physician can induce follicle growth with FSH.
- Letrozole (Femara). This drug is in a class of medications called aromatase inhibitors, which are approved for treatment of advanced breast cancer. Doctors sometimes prescribe letrozole for women who don't ovulate on their own and who haven't responded to treatment with clomiphene citrate. The drug's manufacturer has warned doctors not to use the drug for fertility purposes because of possible adverse health effects. These adverse effects may include birth defects and miscarriage.
- Metformin (Glucophage). This oral drug is taken to boost ovulation. It's used when insulin resistance is known or suspected.
- Bromocriptine. for women whose ovulation cycles are irregular due to elevated levels of prolactin, the hormone that stimulates milk production in new mothers. Bromocriptine inhibits prolactin production.

Surgery

Blockages or other problems in the fallopian tubes usually can be surgically repaired.

Infertility due to endometriosis often is more difficult to treat. Although hormones such as those found in birth control pills are effective for treating endometriosis and relieving pain, they haven't been useful in treating infertility. If patient has endometriosis, doctor may treat him with ovulation therapy, in which medication is used to stimulate or regulate ovulation, or in vitro fertilization, in which the egg and sperm are joined in the laboratory and transferred to the uterus.

Assisted reproductive technology (ART)

- In vitro fertilization (IVF). involves retrieving mature eggs from a woman, fertilizing them with a man's sperm in a dish in a laboratory and implanting the embryos in the uterus three to five days after fertilization. IVF often is recommended as a first-line therapy and is the Treatment of choice if both fallopian tubes are blocked. It's also widely used for a number of other conditions, such as endometriosis, unexplained infertility, cervical factor infertility, male factor infertility and ovulation disorders.

- Electroejaculation. Electric stimulus brings about ejaculation to obtain semen. This procedure can be used in men with a spinal cord injury who can't otherwise achieve ejaculation.

- Surgical sperm aspiration. This technique involves removing sperm from part of the male reproductive tract such as the epididymis, vas deferens or testicle. This allows retrieval of sperm if blockage is present.

- Intracytoplasmic sperm injection (ICSI).

a microscopic technique (micromanipulation) in which a single sperm is injected directly into an egg to achieve fertilization in conjunction with the standard IVF procedure. For men with low sperm concentrations

- Assisted hatching. This technique attempts to assist the implantation of the embryo into the lining of the uterus.

Conclusion of Treatment :

Induction of ovulation

Strat with clomiphene :
R / Clomid 50 mg. Tab.
قرص يومياً لمدة ٥ أيام ابتداء من اليوم الخامس للدورة الشهرية

Then detect ovulation (rise in body temp. by 0.3 – 0.4°C at least for 10 days indicates the occurrence)

If no ovulation occurs :
→ No menses → pregnant (do pregnancy test) .

→ menses : continue clomid 50 mg daily for 5 days each cycle , for 6 cycles .

If no ovulation :
Increase clomid to 100mg daily for 5 days starting from 5th day of the period .

If no ovulation :
continue clomid 100 mg daily for 5 days each cycle , for 6 cycles .

If no ovulation :

Add Human chorionic gonadotropin :
R / Pregnyl 5000 I.U. amp.
حقنة بالعضل فى اليوم الخامس بعد أخر قرص كلوميد

In case of hyperprolactinemia :
R / Parlodel tab.
قرص صباحا و مساء لمدة ٣ -٤ أسابيع

Other drugs for induction of ovulation :
R / Nolvadex (tamoxifen) tab.

قرص واحد يوميا لمدة ٥ أيام من اليوم الثالث للدورة
يكرر لمة ٣ شهور

Contraception

1- Hormonal : injectable , S.C. implants & Oral .
2- Chemical :
- Spermicidal agents e.g. phenyl mercuric acetate .
- Dosage forms : creams , jelly , pessary & Foaming tablets .
- Applied in vagina 15-60 minutes before intercourse .

3- Mechanical :
- Male condom .
- vaginal Diaphragm
- Cervical cap.

4- Intrauterine contaceptive devices (Loop) :
a. Loops are impregnated with barium to render it radio-opaque .two long threads are attached to the loop .
b. Types :
- Loop impregnated with progestrone . changed every one year .
- Loop covered by copper . changed every two year .

C- Mechanism : of contraceptive action :
a. Histo-biochemical changes in endometrium → prevent implantation of fertilized ovum .
b. ↑ Tubal & uterine motility → Expell the ovum .
c. Atrract macrophages → phagocytose sperms & fertilized ovum .

5- Physiological methods : Safety period .
6- Sterilization : males Or females .

Contraceptive Pill

حبوب منع الحمل (تحتوى على مشتقات البروجيستيرون والاستروجين)

C/I women who have the following conditions should not use the pill clot in the legs or lungs, angina pectoris, known or suspected cancer of the breast or sex organs, Vaginal bleeding that has not been diagnosed or liver trouble, known or suspected Pregnancy, women who have had heart attack or stroke.

Dose 1 pill starting from the 5th. Day of the Menstrual cycle for 21 days then wait for menses & start new package from the 5th. Of the next. Cycle & so on .. if one pill is forgot – she must take it when remembered or take 2 at the next day. Anthor contraception aid {e.g. condom} should be used if the women Forgot the dose for more than 2 days .

Cilest	21 tab.	Janssen	Norgestimate 0.25mg.+ Ethinyl oestradiol 0.035mg.
Gynera	21 tab.	Schering	Gestodene 0.075mg.+

			Ethinylestradiol 0.03 mg
Marvelon	21 tab.	Organon	Desogestrel + Ethinyl oestradiol
Mesocept	1 amp.	Cid	Norethistrone 50mg.+Estradiol 5mg.
Microcept	21 Pills	Cid	Levonorgestrel 0.15mg. +Ethinylestradiol 0.03 mg.
Minulet	21 pills	Wyeth	Gestodene 0.075mg.+ Ethinylestradiol 0.03 mg.
Nordette	21 tab.	Nile /American home product	Levonorgestrel 0.15mg. +Ethinylestradiol 0.03 mg.
Trinordiol	21 tab.	Wyeth	Levonorgestrel 0.05mg. +Ethinylestradiol 0.03 mg.
Triocept	21 pills	CID	Levonorgestrel 0.05mg. +Ethinylestradiol 0.03 mg.

Dose 2 tab. Every 12 hours through 72 hours from intercourse .

Contraceptives Contain Progestron only

حبوب منع الحمل التى تحوى مشتق البروجيستيرون فقط)- عدم استخدامها فى موعدها تماماً يسبب حدوث حمل

✍ Contraceptive Progesterone prepn. Loss their contraception power – if not taken at the exact time every day (i.e. every 24hrs. as could as possible) & continousely without stoping – if one pillis forgetn anthor contraceptive aid (e.g. condom) should be used concomitantly at least for 10 days

Exluton 0.05	28 tab.	Organon	Levonorgestrel 0.05mg.
Microlut 0.03	28 tab.	Schering	Levonorgestrel 0.03mg.
Micronor 3.5	28 tab.	Organon	Norethisterone 3.5mg.

Contraceptive Injections حقن منع الحمل

Methode of administration

Norethisterone enanthate 200mg. given every 8 weeks for 4 injection then one injection every 12 weeks – the injection given deep i.m. within the first 5 days of Cycle .

Depo-provera 150	1 Vial	Pharmacia	Medroxyprogesterone 150mg
Gynodian 200	1 amp	Schering AG	Prasterone enanthate 200mg
Mesigyna	1 amp		Norethisterone 50mg.+ Estradiol valerate 5mg.
Noricept 200	1 amp.	Cid	Norethisterone enanthate 200mg.

The duration of action of mesigyna extended to one month , the the dose should be given every 30 plus or minus 7 Days regardless of the cycle pattern, aVaginal bleeding episode will occur 1-2 weeks after the first injection .

Local Contraceptive tablets

الاقراص الموضوعية لمنع الحمل (تحتوى على قاتل للحيوانات المنوية)

Menfegol & Nonoxynol is non hormonal spermicide which act as

non ionic surfactant			
How to use one tab. To be inserted deeply in the Vagin with women finger 10 minutes before sexual intercourse , additional supp. Should be used if intercourse not started within 1 hour.			
Precaution : it is usefull as additional safeguard but dosenot gives adequate protection if used alone , usefull if used with barrier condomes.			
Contraseed 100	12 Vaginal Supps.	Rose lab.	Nonoxynol - 9 100mg.
Sendocin	12 Vaginal Supps.	ACPC-Jordan	Nonoxynol - 9 100mg.
Neosampoon 60	12 foaming Vag. tab.	Eisai	Menfegol 60mg.

Intrautreal loops لولب منع الحمل

Mechanism 1- prevent the sperms to reach the Ovarian tube
2-make the uterous enviroment not suitable for the implantation or growth of Foetus.

C/I 1- suspected malignancy in the genital area 2- pelvic inflammatory disease 3- anatomical changes of the uterus or cervix 4- genital bleeding of unknown origin 5- clotting disorders .

Copper T 380	1 (IUD)	FEI USA	380 m.m.squre of copper
Mugard 380	1 (IUD)	Contec -India	copper surface area 380
Multiload 375	1 (IUD)	Organon	Polyethylene loop with a copper wire wound around the stem giving a total copper surface area of 375 mm square
Nova–T	1 (IUD)	Schering-German/Sofeco	the vertical portion of the T) is wound round with thin copper wire stabilized with a silver core (107-141mg. copper) and (11-29 mg. silver)

Estrogens & Progestrones

Oestrogen {Oestradiol}

Uses Depending on the preparation: & the dose :
1-Menopausal syndrome 2- To prevent/retard osteoporosis induced by oestrogen deficiency states 3-Contraception (depending on preparation)

Ethinyl Oestradiol 50	20 tab.	Kahira	Oestradiol 50mcg.
Estraderm-TTS	10 systems	Novartis	Oestradiol 50 mg
Folone-5	1 Amp.	Misr	Oestradiol 5mg
Ovestin 1	20 tab.	Sedico /Organon	Oestradiol 1mg.
Ovestin 1	Vag. Cream	Sedico /Organon	Oestradiol 1mg./gm.
Ovestin 0.05	15 Vag. Tab	Sedico /Organon	Oestradiol 0.05 mg.%
Premarin 0.625	28 tab.	Wyeth	Conjucated Oestrogen 0.625

Premarin 1.25	28 tab.	Wyeth	Conjucated Oestrogen 1.25mg
Premarin 0.625	Vag. Cream	Wyeth	Conjucated Oestrogen 0.625/gm

N.B. TTS means transdermal therapeutic system i.e. it is applied to the skin and gives a systemic effect, the system release 50mcg.per day.

Ovestin Dose Menopausal symp.4-8mg. Daily then ↓↓ gradually to 1-2 mg. Daily 2 – Infertility due to Cervix disturbances 1-2 mg. During Days 6-15 of the menst. Cycle max. 8mg

Progestogens

Mechanism Progesterone is released during the luteal phase of the menstrual cycle which leads to the development of secretory endometrium.

Indications 1- used as Hormonal contraception 2-In the Treatment of dysmenorrhoea, endometriosis, hirsutism, when oestrogens are C/I. 3-Supplementation of insufficient secretion of progesterone in women participating in fertilisation programmes. 4-As an adjuct to post-menopausal oestrogen replacement therapy to reduce the risk of endometrial hyperlasia and carcinoma.

Progestrone & Its Derivatives

Cyclogest 200	15 supp.	CoxPharma-England	Progesterone 200mg
Cyclogest 400	15 supp.	CoxPharma-England	Progesterone 400mg.
Colprone 5	35Tab.	Wyeth Ayrest	Medorgestone 5 mg
Duphaston	20 tab.	Pharco/ Duphar/ ChemiPharm	Dydrogesterone 10mg.
Gestanon 5	20 tab.	Sedico /Organon	Allyoestrenol 5mg.
Gestone 50	10 amp.	Nordic-UK	Progesterone 50mg
Gestone 100	10 amp.	Nordic-UK	Progesterone 100mg
Lutone 25	5 Amp	Misr	Progesterone 25mg.
Prontogest	10 amp.	Nile /Marcyrl	Progesterone 100mg
Provera 5	24 tab.	Pharmacia	Medroxyprogesterone 5 mg.
Utrogestan	20 tab.	October Pharm /Besins	Progesterone

Steronate nor 5	20 Tab.	Hi Pharm	Norethistrone acetate5 mg
Cidolut Nor 5	20 Tab	Cid	Norethistrone acetate 5 mg.
Cidolut depot 250	1 i.m. amp.	Cid	Norethistrone acetate 250 mg.

Turinal 5	20 tab.	Gedeon Richter	Allyoestrenol 5mg.

Oestrogen+Progesteron

Uses regulate Menstrual Cycle & relief disturbances before & after menses.

Dose usually starting from the 5th. Day of the menstrual cycle &

continue tell the 21 pills is finished – can be repeated for several cycles.			
Activelle	28 tab.	Novo	Oestradiol 2mg+ Norethistrone acetate1mg.
Cyclopreg nova	21 tab.	Schering	Oestradiol l2mg./ tab.+ Norgestrel 0.5mg. in the last 10 tab.
Estracomb TTS	4 patches	Novartis	Estraderm 50mg.+ 4patches→Estragest .25/50
Kliogest	28 tab.	Novo Nordisk	Oestradiol 2mg+ Norethistrone acetate1mg
Lutofolone	1 ampule	Misr	Progesterone 20mg.+ Oestradiol l2mg.
Prempak – C	4 tabs.	Wyeth	Conjucated oestrogen +12 tabs each of Norgestrel
Trisequence	28 tabs.	Novo Nordisk	12tab.of Oestradiol2mg +
	10tab.of Oestradiol 1mg+ Norethistrone 1mg		

Agnucaston	30 tab	Bionorica/ Techno mad	Dry ext. of the fruit of the chaste tree
Used for ttt of Menstrual disorders- Premenstrual syndrome– Mastalgia			

Male+Female Sex Hormone			
Cidodian	1 amp.	Cid	Oestradiol 4mg.+Prasterone20mg.
Gynodian depot	1 amp.	Cid/ Schering	Oestradiol 4mg.+Prasterone20mg.

Sterility & infertility Drugs

1- Human chorionic gonadotrophine (HCG)

هرمونات تنشيط البويضات (للسيدات) و الحيوانات المنوية (للرجال)

HCG obtained from the urine of pregnant women. It stimulates the steroidogenesis in the gonads by virtue of a biologic effect similar to that of LH – In the male it promotes the production of testosterone and in female the production of estrogens and particularly of progesterone after the ovulation.

Indications Hypogonadotrophic hypogonadism – Delayed puberty with, insufficient gonadotrophic pituitary function – Cryptorchidism, not due to an anatomic Obstruction
- Sterility in selected cases of deficient spermatogenesis in female Sterility due to the absence of follicle-ripening or ovulation.

Warnings due to increased androgen production. HCG should be used cautiously in prepubertal boys to avoid premature epiphyseal closure or precocious sexual development.

Dose (I.M.only) 500-1000 iu. 2-3 times per week
- 1500 iu. Twice week for at least 6 months – Usually 3000 i.u. per week,in combination, with HMG preparation → usually, 5000-10000 iu. For 1 or 3 days in sequence to Treatment with an . HMG preparation . A repeated injection of 5000 iu. May by given 7 days later to prevent insufficency of the corpus luteum.

Choriomon 5000 i.u.	3 Vials	IBSA	5000 i.u.
Choragon 5000 i.u.	3 amps.	Ferring	5000 i.u.
Pregnyl 1500 i.u.	3 Amp.	Organon	1500 i.u.
Pregnyl 5000 i.u.	one Amp.	Organon	5000 i.u
Profasi 1500 i.u	3 Amp.	Serono	1500 i.u
Profasi 5000 i.u	one Amp.	Serono	one Amp. O 5000 i.u.

Section-2 Human Menopausal Gonadotrophine HMC

Follicle stimulating hormone[FSH]75 i.u.+luteinizing hormone [LH] 75 i.u.
Side effects ovarian rupture & intrapretoneal hemorrhage ascites, oliguria, hypotension, and arterial thrombo-embolism, also there is a risk of multiple birth (ovarian hyperstimulation).

Humegon	1 amp.	Organon	[FSH]75 i.u.+luteinizing hormone [LH] 75 i.u.
Pergonal	1 amp.	Serono	[FSH]75 i.u.+luteinizing hormone [LH] 75 i.u.
Menogon	10 amp.	Ferring	[FSH]75 i.u.+luteinizing hormone [LH] 75 i.u.
Merional	10 amp.	IBSA	[FSH]75 i.u.+luteinizing hormone [LH] 75 i.u.

2- Follitropin alpha (r-h FSH)

فولى تروبين الفا هرمونات تنشيط نمو البويضات) (و الحيوانات المنوية

r-h FSH = recombinant Human Follicule stimulating Hormone
The development and release of an egg from the ovaries is controlled by FSH and LH, which are both released from the pituitary gland in the brain. This hormone acts directly on the ovaries to help stimulate the development of follicles, Follitropin alfa is also used as a fertility medicine to help men with low sperm counts produce more sperms., it is administered daily. It is given subcutenously .

Gonal-F 75	1 amp.	Serono	Follitropin alpha (r-h FSH) 75 i.u. S.C.
Puregon 50	3 amp.	Organon	Follitropin alpha (r-h FSH) 50 i.u. S.C.
Puregon 100	3 amp.	Organon	Follitropin alpha 100 i.u. S.C.
Fostimon 75	10 amp	IBSA	Urofollitrophin 75 i.u.
Metrodine HP 75	1 amp.	Serono	Urofollitrophin 75 i.u.

Metrodine is Folicular stimulating Hormone (FSH) , has the same properties of Human Menopausal Gonadotrophin above
For the induction of ovulation in anovulatory women.
Target Result one or more ampoules per day till oestrogen levels and ultrasound size of follicles are

indicative of follicular maturation.
Metrodin cycles should last 8 – 10 days, to induce ovulation, inject 5000 – 10000 IU HCG one day after terminating Treatment with Metrodin

3- Clomiphene كلوميفين - منشط للتبوض ونمو الحيوانات المنوية

Mechanism is an ovolation inducer, it has a competitive inhibiting action on Oestrogen retrocontrol at the level of hypothalamus causing an increase in the follicular stimulating hormone (FSH), result in follicle maturation, in turn increase in Lutenizing hormone (LH) peak which stimulates the ovulation and the formation of corpus luteum

Side effects CNS disturbances include vertigo, insomnia,and depression.ther is a risk of multiple birth

Dose 1 tab. Daily for 5 days, starting from the 5th. Day of the Menstrual Cycle – if no ovulation – given 100mg. Once daily for 5 days – at the next Cycle .

Clomid 50	10 tab.	Aventis	50mg.
Clostibegyt 50	10 tab.	Alex /Hung	50mg
Clomiphene 50	10 tab.	Adco	50mg.
Clomifert 50	10 tab.	Misr	50mg.

4- Bromocriptine روموكربتين لايقاف هرموان البرولاكتين - احد الاستخدامات

Mechanism is a dopamine agonist acting at receptors in the CNS, CVS, GIT, and pituitary-hypothalamic axis, it inhibits the secretion of prolactin .

Dose Hyperprolactinemic The initial Dose is ½ to one 2½ mg tablet daily.
–The therapeutic Dose usually is 5-7.5 mg and ranges from 2.5-15 mg/day.

Dopagon 2.50	20 tab.	Memphis	2.50mg.
Parlodel 2.5	20 tab.	Novartis	2.5mg.
Lactodel 2.5	20 tab.	Amoun	2.5mg.

5- Danazol دانازول – لعلاج العقم الناتج عن امراض خاصة (انتباز باطنى رحمى) فى بطانة الرحم

Mechanism Supresses the pituitary ovarian axis by inhibiting the output of both FSH and LH from the pituitary gland in females.

A nonhormonal method of contraception is recommended when danazol is administered

Dose Endometriosis 800 mg given in two divided doses is recommended. For mild cases,200 mg to 400 mg given in two divided doses & adjusted depending on patient response. Therapy continue uninterrupted for 3 to 6 months but may be extended to 9 months if necessary.

Fibrocystic Breast Disease 100 mg to 400 mg given in two divided doses depending upon patient response. Therapy should begin during menstruation.

Danazant 200	100 caps.	Antigen	200mg.
Danazol 200	100 caps.	Antigen	200mg.
Danol 200	100 cap	Sanofi	200mg.

Dopergin 0.2	20 tab	Schering	Lisuride hydrogenmaleate 0.2mg.

Dopergin Dose the tab. Must be taken with meal : for primary ablactation immediately after delivery or abortion 1 tablet 2-3 times for 14days, secondary ablactation first day one tab. Evening, 2nd.day 2 tab. Afternoon and evening, 3rd.day to max.14th. day one tab. 3 times daily ; Galactorrhoea, post-portum galactostasis.

Dostinex 0.5	2 tab.	Pharmacia-Pfizer	Cabergoline 0.5mg.

Dostinex USES : to prevent or stop lactation , soon after delivery of baby 2- disorders which are due to increased prolactin levels such as, missing or irregular periods, increased milk secretion or infertility, or in men, impotence or decreased libido.

Dose Dostinex is to be taken by mouth, preferably with meals.⇨ to stop lactation: Half a tablet every 12 hours for 2 days.

Livial 2.5	28 tab.	Organon	Tibolone 2.5mg.

Livial Stabilize hypothalamic-pitutary system – alleviate complains like irritability a consequence of menopause or removal of ovary

Chapter -18
Worms Infection

Content of this chapter :

1- Prescription for Belharziasis [Schistosomiasis]

2-Prescription for Mixed Worm infection in adults

3- Prescription for Tenia sagenata

50ml. castor oil or 30gm. Mg. Sulphate salt in water or 2 laxtive tablets can be prescribed one time for expelling of the dead worms at the third day of treatment .

Belharzia

R/ Distocide tab. 20-40mg. /kg. on one two divided doses

Notes :

❋ Distocide like Belicide tab. – Bilharzid tab. – Biltricide tab. – Epiquantil tab.] all. Contain 4 tab. Each of Praziquantil 600mg.- the dose is calculated as one dose or on two divided doses . it may impaire the ability to drive cars for hours, also lactating womens should stop lactation for 3 days after the dose .

🕮 Chronic bilharzias may immigrate to damaging of the liver cells & liver cirrhosis or hepatitis.

Mixed Worms Infections

R/ Fluvermal tab.

قرص / ١٢ ساعة لمدة ٣ أيام و يكرر نفس الكورس بعد أسبوعين ثم بعد ٤ أسابيع

Notes :

❋ Fluvermal contain Flubendazole which is effective for Ascaris,Entrobiasis, Filariasis, hook worms & mixed infections .

❋ For complete radication of the Worms & Ova The dose should repeated again after 2 & 4 weeks .

❋ it is prefere to give a protective dose to the other members of the family

❋ Albendazole & Mebendazole Preparations give the same spectrum and therapeutic results of Mebendazole.

🕮 Giving magnesium sulphate شربة الملح (30-50gm. In 100ml. water 1hour before meal) at the end of the anthelimintic course help to expel dead worms out of the GIT

🕮 Table Include all Preparations that have broad spectrum anthelimintic activity in the Egyptian market.

Albindazole			
Alzental	2tab.	Eipico	200 mg.
Bendax	6 tab.	Sigma	200 mg.
Vermizole	6 tab.	Amoun	200 mg.
Vermizole	2tab.	Amoun	200 mg.
Flubendazole			
Antiver	6 tab.	Alex.	100 mg.
Mebamox	6 Chew. Tab.	Nasr	100 mg.
Verm-1	2 tab.	Marcyrl	500 mg.
Vermin	6 tab.	Memphis	100 mg
Mebendazole			
Antiver	6 tab.	Alex.	100 mg.
Mebamox	6 Chew. Tab.	Nasr	100 mg.
Verm-1	2 tab.	Marcyrl	500 mg.
Vermin	6 tab.	Memphis	100 mg

Tapewrom

R/ Niclosan chewable tab.

أقراص مضغ مرة واحدة ثم قرصين مضغ يوميا 4
لمدة ٦ أيام

Notes :

❋ Niclosan like Yomesan contain Niclosamide an effective agent for Tapeworm.

🕮 Infection of tape worm mainly coming from eating meat that not coaked properly.

🕮 The tablets should be chewed first before taking water.

Chapter-19
Clinical Investigation
الفحوصات الإكلينيكية

Laboratory sampling

Blood sampling

1- Capillary blood : (by skin puncture)

- Obtained from a finger or thumb by a lancet .
- Up to 0.2 ml of whole blood can be collected .
- It is used for :
  - blood count
  - microhaemtocrit
  - several micromethods for chemical substances in which whole blood is satisfactory e.g. glucose , urea .

2 – Venous blood : (by venipuncture)

- frequently used .
- Taken from any apparent prominent vein .
- No limited volume .
- Whole blood , plasma or serum could be obtained .
- When blood is allowed to clot , serum is formed .
- If clotting is prevented by means of an anticoagulant , whole blood is obtained .
- If cells are separated from whole blood , plasma is obtained .
- Whole blood is used for : ESR , Osmotic fragility .
- Plasma is used for : PT and other coagulation factors .
- Serum is used for most chemical analysis .

3- Arterial blood : (by arterial puncture)

- Infrequently used .
- Radial , brachial or femoral artery may be used .
- Mainly for blood gases & PH of the blood .

Urine sampling

1- *Early morning sample :*

- It is the first sample voided in the morning .
- It is of suitable volume and it ha a uniform concentration .
- *It is used for* :
- Qualitative analysis e.g. glucose , proteins .
- Microscopic examination of the sediment .

- Pregnancy test .

2- 24-hours urine sample :

- The 1st voided urine in the morning is discarded . collect urine till the same hour next morning . The last sample is kept separate for fresh examination .
- *It used for* :
- Quantitative determination of daily excretion of urinary constituents e.g. Ca , Ph , hormones .
- Creatinine clearance test .

3- mid – stream urine sample :
used for Culture and sensitivity test .

4- Timed sample : it is used for :

- Creatinine clearance test .
- Post-prandial blood glucose .

5- Random sample : good positive but poor negative .

Haemostasis

Haemostasis can be defined as that property of the circulation that maintains blood in the fluid state (within blood vessels and prevents excessive blood loss after vascular injury) .

Thus normal physiology depends on delicate interactions between :

a. Blood vessels
b. Platelets
c. Plasma coagulation factors and their inhibitors
d. Fibrinolytic system

Laboratory methods to diagnose the cause of bleeding :

1- Tests of the vascular and platelet phases :

Bleeding time :

- the time taken for bleeding to stop is a measure of the efficiency of the vascular system and platelet phase (adequate number and function of platelet) .
- Normal value : 2-5 min .

Platelet count :

- To differentiate between thrombocytopenia and platelet dysfunction .

Platelet aggregation : this test is performed if platelet dysfunction is suspected .

2- Tests of coagulation system :

- Coagulation time : (CT) → Normal : 4-8 min
- Prothrombin time : (PT)
  - Sample : Citrated plasma
  - This test measures the clotting time of plasma in the presence of an optimal concentration of tissue factor extract (thromboplastin) and calcium

normal range : 11-14 sec.

The common causes of prolonged PT are :

1- Administration of oral anticoagulants
2- Liver Disease
3- Vitamin K deficiency
4- DIC

5- Inherited factor VII , X , V deficiency .

- Activated partial thromboplastin time (α-PTT):
  - Sample : Citrated plasma .
  - Principle :this test measures the clotting time of plasma after activation of contact factors but without adding tissue thromboplastin , and so indicates the overall efficiency of the intrinsic clotting pathway .
  - Normal range : 30- 40 sec

The common causes of prolonged α-PTT are :

1- Heparin therapy
2- DIC
3- Circulating anticoagulants
4- Inherited factor deficiency (intrinsic & Common pathway)

- Thrombin time (TT) :
  - principle : thrombin is added to the citrated plasma and clotting time is measured .
  - The TT is affected by the concentarion of fibrinogen and by the presence of inhibitory substances including :
  - Fibrinogen / fibrin .
  - FDPs (fibrin degradation products)
  - Heparin .
  - Normal range : 15-19 sec

The common causes of prolonged TT are :

1- Hypofibrinogenemia
2- DIC
3- Heparin therapy
4- Dysfibrinogenemia

Complete blood count (CBC)

CBC includes the following items :

1- Hemoglobin concentration .
2- Hematocrit or packed cell volume (PCV)
3- RBC count
4- Blood indices (absolute values)
5- Total and differential WBC count
6- Platelet count

Collection of blood for CBC :

1- Venous blood :
- Is best withdrawn from an antecubital vein by a disposable plastic syringe
- Skin should be disinfected with 70% alcohol and allowed to dry before being punctured
- Blood is then evacuated in glass or plastic fitted with caps and containing EDTA (Ethylenediamine tetra-acetic acid) as an anticoagulant , and mixed .

2- Capillary blood :
• Can be obtained using a sterile lancet from :
- 3rd or 4th finger on its palmer surface about 3-5mm lateral from the nail bed (in adults)

- Lateral or medial parts of the plant surface of the heel (In infants) .

Hemoglobin (Hb) Concentration

• Normal ranges :
- Males : 15.5 ± 2.5 gm/dl
- Females : 14.0 ± 2.5 gm/dl

Hematocrit value or packed cell volume (PVC) :

• PCV is defined as the percentage of packed blood cells to the whole blood .

• Normal range :
- Males : 47 ± 7 %
- Females : 42 ± 5 %

• Uses :
- Simple screening test for anemia .
- In conjunction with accurate estimation of Hb and RBC count, PCV enables the calculation of the blood indices .

Total cell Count :

1- RBC count :
• Normal range :
- Males : $5.5 \pm 1.0 \times 10^6$
- Females : $4.8 \pm 1.0 \times 10^6$

2- WBC count :
•Normal range : $4.0 – 10.0 \times 10^3$

Blood Indices

They are important for the classification of anemia :

1- Mean cell volume (MCV) :
• Mean volume of a single RBC .
• Normal range 86 ± 10 fl

2- Mean cell hemoglobin (MCH) :
- Mean quantity of Hb in a single RBC
- Normal range : 29.5 ± 2.5 Pg
- Mean Cell hemoglobin concentration (MCHC) :
- Mean quantity of Hb in 100 ml of packed RBCs
- Normal range : 32.5 ± 2.5 gm / dl

Classification of anemia

Microcytic Hypochromic	Normocytic Normochromic	Macrocytic
MCV < 76 fl	MCV 76-96 fl	MCV > 96 fl
MCH < 27 pg	MCH > 27 pg	
Causes : - Iron deficiency - Thalassaemia - Anemia of chronic illness - Lead poisoning - Sideroblastic	Causes : - many hemolytic anemias - Anemia of chronic disease - After acute blood loss	Causes : - megaloblastic : Vit B12 or Folate deficiency - Non-megaloblastic: Alchol Liver disease

anemia	- Renal disease - Mixed deficiencies - Bone marrow failure:- • Post-chemotherapy • Infiltration by carcinoma	Myelodysplasia

Reticulocyte Count

- Reticulocytes are juvenile RBCs which contain remnants of ribosomes and RNA
- The number of reticulocytes in the peripheral blood is a fairly accurate reflection or erythropoietic activity
- Normal range : 0.5 – 2.5 %

Differential WBCs count

Neutrophils	2.0 – 7.5 x 10^3 / mm	40 – 75 %
Eosinophils	0.04 – 0.4 x 10^3 / mm	1- 6 %
Basophils	0.02 – 0.1 x 10^3 / mm	0 – 1 %
Lymphocytes	1.5 – 4.0 x 10^3 / mm	20 – 45 %
Monocytes	0.2 – 0.8 x 10^3 / mm	2- 10 %

Platelet count

Normal range : 150 – 400 x 10 / mm

Causes of neutrophil leukocytosis :

- Bacterial infections (especially pyogenic bacterial) .
- Inflammation and tissue necrosis e.g. myositis , vasculitis , cardiac infarction , trauma .
- Metabolic disorders e.g. uremia , acidosis and gout .
- Neoplasms of all types e.g. carcinoma , lymphoma .
- Acute hemorrhage or hemolysis .
- Corticosteroid therapy
- Myeloproliferative diseases e.g. CML
- Treatment with GM-CSF or G-CSF

Causes of neutropenia :

- Part of general pancytopenia:
  - • Bone marrow failure
  - • Splenomegaly
- Selective neutropenia :
  - • Congenital
  - • Drug-induced ; anti-inflammatory drugs , antibacterial drugs , anticonvulsants , antithyroids , hypoglycemics , phenothiazines , psychotropics and antidepressants .
  - Benign (racial or familial)
  - Cyclical

- Immune : autoimmune , SLE , felty's Syndrome , hypersensitivity and anaphylaxis
- Infections : viral and fulminant bacterial infections .

Causes of eosinophilia :

- Allergic diseases : especially hypersensitivity of the atopic type , e.g. bronchial asthma .
- Parasitic diseases : hydatid disease , amoebiasis , hookworm & ascariasis .
- Certain skin diseases e.g. psoriasis
- Hyper-eosinophilic syndrome
- Hodgkin's disease and some other tumors
- Eosinophilic leukemia

Causes of basophilia :

- Myeloproliferative disorders , particularly CML .
- Reactive immunologic conditions (IgE-mediated hypersensitivity)
- Chronic inflammatory disorders (rheumatoid arthritis , ulcerative colitis)
- Viral infections
- Following radiation

Causes of Lymphocytosis :

- Infections :
  - Acute : infectious mononucleosis , rubella , pertussis , mumps , cytomegalovirus , HIV , herpes simplex or zoster .
  - Chronic : tuberculosis , toxoplasmosis , brucellosis , syphilis .
- CLL
- ALL
- Non-Hodgkin's Lymphoma
- Thyrotoxicosis .

Causes of monocytosis :

- Chronic bacterial infections , e.g. tuberculosis , brucellosis , typhoid
- Protozoan infections
- Chronic neutropenia
- Hodgkin's disease and other malignancies
- Myelodysplasia , especially chronic myelomonocytic leukemia
- Treatment with GM-CSF or M-CSF

Cerebrospinal fluid (CSF)

CSF tapping sites :

1- Lumbar region
2- Ventricular space in children

The volume obtained depends on CSF pressure :

1- With normal pressure ; 10-15 ml could be obtained
2- While with increased pressure , only 1-2 ml is obtained
3- In neonates , 1-3 ml is usually obtained

The sample is collected aseptically into three sterile screw capped test tubes :

1- Chemistry and immunology studies
2- Microbiologic examination

3- Cell count and cell differentiation

Physical Examination

1- Volume : Comment on the volume of the sample sent
2- Aspect :
- Normal : Crystal clear
- Abnormal aspects : Cloudy , smoky , opalescent , slightly turbid , turbid or grossly bloody .
- Causes of turbidity :
  - Cells :
    - Leucocytes : (neutrophils & lymphocytes) > 200 cells/ cmm
    - Erythrocytes > 400 cells/cmm
  - Micro-organisms (bacteria , fungi)
  - Spontaneous clotting : due to increased protein content > 1 g/dl

.

3- Colour :
- Normal ; colourless
- Abnormal colours :

a- Xanthochromia :

Yellow colour of supernatant of centrifuged CSF
- Subarachnoid hemorrhage : provided that RBCs are present long time to cause lysis .
- Bilirubin : increased direct bilirubin > 5-10 mg/dl with normal blood CSF barrier or increased indirect bilirubin with immature blood CSF barrier in premature infants
- Increased concentration of CSF proteins > 150 mg/dl
- Presence of coagulum : dt ↑ CSF proteins > 1g/dt or ↑ viscosity of CSF ; as in metastatic mucinous adenocarcinoma to the meninges

b- Red colour :
- Traumatic tap → Clear supernatant after centrifugation
- Subarachnoid hemorrhage : no clearing → yellow supernatant .

Normal CSF is crystal clear (colorless) with viscosity comparable to water :

- Alkaline PH 7.3
- Pressure 80-120 mm CSF
- Specific-gravity 1003-1006

Chemical Examination

1- protein content :

• Normal protein content in CSF :
- By lumpar puncture : 15 – 45 mg/dl
- By ventricular puncture : 10 – 45 mg/dl
- In neonates normal proteins : 20 – 150 mg / dl

• Increased CSF proteins :
- Traumatic tap.
- Incraesed permeability of blood-CSF barrier e.g. meningitis , subarachnoid hemorrhage , uremia ...
- Obstruction Of CSF Circulation e.g.Froin's Syndrome & tumors
- Incraesed Synthesis of proteins within the CNS : IgG

synthesis with plasma cell & lymphocytic infiltration in degenerative diseases
- Tissue degeneration e.g. parkinsonism

• Decreased CSF proteins :
- Leakage of CSF : e.g. previous puncture , otorrhea or rhinorrhea
- Increased intracranial pressure

2- Glucose content :
- Normal CSF glucose : is 60-70% of blood glucose i.e 50-80 mg/dl
- ↑ CSF glucose : dt hyperglycemia 2-4 hours before lumbar puncture
- ↓ CSF glucose ; < 40 mg/dl : bacterial meningitis , viral meningitis , TB meningitis , subarachnoid hemorrhage and metastatic carcinoma

3- Chloride content :
- Normal ; 700 -760 mg/dl = 120-130 mol/ L
- ↓ in meningitis

Microscopic examination

- Done immediately after collecting the CSF specimen , because the cells disintegrate on standing
- Normal total cell count in adults : up to 5 lymphocytes / cmm
- In neonates : up to 30 lymphocytes / cmm
- In bacterial meningitis , the predominating cells are polymorphs
- In viral meningitis the predominating cells are lymphocytes
- In chrome meningitis , the predominating cells are lymphocytes and plasma cells .

Other Investigations

- Bacteriological examination : smears stained with : gram stain : gram stain , Ziehl-nelson stain
- Srological tests for syphilis

Complete urine examination

Urine is a modified ultra-filtrate of plasma

Physical Examination

1- Volume :
- Normal : 700-2500 ml/day
- Nocturnal polyuria : the first symptom of failure of concentrating power of the kidney
- polyuria (> 2500ml / day) :
  - Physioloical causes
  - Pathological causes : early sign of CRF . DM , DI
- Oliguria (< 700 ml / day) :
  - Pysiological Causes
  - Pathological causes : Salt & water depletion from diarrhea , Vomiting or fever , heart failure , ADGN

- Anuria : Complete cessation of urine output

2- Colour :

- Normal colour of urine : amber yellow dt urochrome pigment and trace amount of urobilinogen and other pigments
- Abnormal colours :
  - o Reddish tint : excessive amount of urobilinogen e.g. hemolytic anemia
  - o Red urine :
    - Physiological : diet (beet root) – drugs – dyes
    - Pathological : blood → hematuria – hemoglobinura
  - o Liquorice urine : presence of bilirubin
  - o Whitish urine : in case of phosphate
  - o Milky urine : presence of chyle (Chyluria) in case of filariasis and ruptured lymphatic vessels
  - o Black urine :

- In alkaptonuria , due to presence of homogentisic acid
- In melanuria , due to presence of melanin pigment
- In phenol poisoning
  - o Greenish urine : in case of pseudomonas infection → pyocyanin Pigment .

3- Aspect :

- Normal : Clear
- Causes of turbidity : urinary crystals , pyruia

4- Sediment :

- Normally : there is no sediment
- White deposit in alkaline urine : phosphates , which are dissolved by acetic acid
- Yellow , red or brown deposit in concentrated or acidic urine : urates and uric acid (they disappear on warming)

5- Odour :

- Normal : fresh urine has a characteristic aromatic odour
- Abnormal odour :
  - Some foods e.g. Garlic
  - Fruity odour in uncontrolled DM .
  - Ammoniated in urine infection
  - Fishy odour in bladder cancer

6- Specific Gravity :

- Of the early morning and 24-hours urine : 1015 – 1025
- Randomly measured urinary SG : 1002 – 1060
- High SG : DM , proteinuria , radiographic media
- Low SG : DI , hysterical polydepsia , CRF (1010)

7- PH :

- Normal urine : is slightly acidic (PH = 6.8)
- It is measured by universal PH indicator or by urine reagent strips
- Alkaline urine : Post-meal alkaline tide , alkali intake , CRF

Chemical Examination

1- Proteins : Normal urine : contains small quantity of proteins usually less than 20 mg/dl (140 mg/day)
2- Glucose : Normally , too small amount to be detected (Up to 100 mg/day)
3- Ketone bodies : Acetoacetic acid and acetone (as well as OH-Butyric acid) may appear in the urine of patients with severe DM , after starvation or prolonged vomiting
4- Urobilmogen :
- Normally , there ia a normal trace of urobilinogen
- Increases in hemolysis

5- Bilirubin :
- Not present mormally
- Only conjugated bilirubin is excreted

6- Bile salts
7- Blood

Microscopic Examination

1- Cells :
- RBCs (0-1 / HPF) → ↑ in stone , tumors , trauma , GN
- Pus cells (0-1 / HPF) → ↑ in UTI , pyelonephritis , GN
- Epithelial cells

2- Crystals :
- In acidic urine :
  - Amorphus urates
  - Uric acid
  - Ca oxalate
- In alkaline urine :
  - Amorphous phosphates
  - Triple phosphates
  - Ca Oxalate

3- Casts :
- Casts are common in CRF
- They are moulds of renal tubular endothelial lining :
  + Hyaline casts
  + Blood casts (glomerulonephritis)
  + Epithelial casts
  + Granular casts
  + Leukocyte casts (glomerulonephritis , pylonephritis)

4- Miscellaneous :
- parasite
- Droplets of oil
- Spermatozoa

Complete stool Examination

Macroscopic Examination

1- Volume :
- Normally less than 200 gm/day unless excessive dietary fibers are ingested
- Large volumes indicate diarrhea

2- Consistency :
- Normal stools are found but soft
- Watery diarrhea is characteristic of bowel infection (viral or bacterial)
- Soft stools are seen in mal-absorption

3- Colour :
- The normal colour varies from light to dark brown depending on diet
- Black stools may be due to :
  - Bleeding from upper gastrointestinal tract → melena
  - Iron intake
- Red blood is usually due to bleeding from the lower alimentary tract and anal

e.g. hemorrhoids , ulcerative colitis
• Dark green stools are seen in diarrhea due to intestinal hurry . In cholera , the stools are almost watery and conatin epithelial cells and shreds of mucus (rice water) .
• Greyish white stools in obstructive jaundice (lack of bile pigments)
• Clay stools are produced by excessive amounts of fat (Steatorrhea)

4- colour :

+ The normal odour is mainly due to products of protein putrefaction (Indole , skatol)

+ Offensive stool are seen in :

- Excessive protein intake
- Melena stools
- Infective diarrheas , but cholera stools are odourless
- Mal-absorption (stools smell rancid)
- Obstructive jaundice (absence of bile leads to putrefaction)

5- Other changes :

- Mucus :
  - Normally , stools contain very little mucus
  - Excessive mucus is seen in :
    - Irritable colon (mucus may be in casts)
    - Inflammatory conditions
    - Intake of purgatives and antibiotics
    - Neoplasms (often with pus and blood)
- Pus is seen commonly in :
  - Dysentry
  - Ulcerative colitis
  - Malignancy

Microscopic Examination

1- Examination for red blood cells : excess RBCs is seen in the presence of hemorrhage , inflammation or ulceration .

2- Examination for pus cells : a large number is seen in dysentery and ulcerative colitis .

3- Examination for muscle fibers : undigested muscle fibers indicate deficient digestion usually due to diarrhea

4- Examination for fats :

- Normally , present in minimal amounts as neutral fats , (as oily globules) fatty acid crystals (as slender needles) or soaps (irregular plaques with rolled edges)
- Excess fats indicates deficient digestion , or absorption

5- Examination for parasites : examination should be made from specimens

Bacterial Examination

1- A gram stained film : Is useful to show moniliasis or severe staphylococcal infection

2- Cultures : are made to identify pathogenic bacteria

	Normal	Amoebic dysentery	Bacillary dysentery	*Steatorrhoea*
Volume	Normal	Normal	↑	*Large*

Odour	Normal	Offensive	Offensive	*Offensive*
Consistency	Soft	Loose slimy	Watery	*Loose*
Mucus	-	Excessive	Slight	*+*
Reaction	Alkaline	Acidic	Alkaline	*Alkaline*
Undigested food	-	++	+	*+++*
Red cells	-	++++	+	-
Pus cells	-	++	++	-
Fat content	--	-		*Excessive*

Chemical Examination

1- Occult blood : to detect small amounts , not seen by naked eyes .The test is simple using strips impregnated with benzidine or guaiac which gives blue colour if positive .

2- Fat balance test : the patient is put on a diet containing 50 g fat daily for 1 week . several estimation of faecal fat content is made after the first 3 days :

- Normally more than 90 % of the fat is absorbed
- Reduced % indicates deficient absorption or digestion of fats

Liver Functions tests (Routine Tests)

Test	Normal value
1- Total bilirubin • Conjugated (direct) • Free (indirect)	*0.5- 0.9 mg* *0.3 – 6.6 mg* *0.2 – 0.3 mg*
2- Albumin	*4-5.5 gm*
3- Globulin	*1.5 – 4 gm*
4- Alb / Glob ratio	*1.8 – 2.7*
5- Prothrombin time	*10 – 15 sec*
6- Serum enzymes • Alkaline phosphatase • SGOT • SGPT • Lactic dehydrogenase	 *9 – 10 u* *0 – 12 u* *0 – 12 u* *200 – 700 u*
Special tests	
1- Fetoprotein	*Less than 10 units*
2- Immunoglobulins • Ig G • Ig M • Ig A	 *1200 – 1400* *80 – 120* *250 – 350*
3- *Bromsulphalein*	*0-5 %*

Significance of individual tests

1- Bilirubin :

- Best measurement of cholestasis
- In hepatitis , it is proportional to intra-hepatic obstruction and not liver
- damage .
- The ratio of conjugated to unconjugated fraction may throw some light on the
- differential diagnosis of jaundice :

- Predominantly conjugated → in obstructive jaundice
- Predominantly unconjugated → in hepatitis and hemolytic jaundice .

2- Transaminases :

- High levels are sensitive indicators of liver cell damage
- They are also good indicators of recovery when they diminish and come down to normal .
- SGPT is more specific as SGOT is found widely in other tissues (heart , muscles) and leak out when damaged .

3- Alkaline phosphatase : High levels are obtained in most liver diseases, but it is the very high degree of rise (more than 30 u) which is significant in 3 conditions:-

- Obstructive Jaundice : Bilirubin is also markedly elevated
- Metastases infiltrating the liver : Bilirubin may not be elevated or slightly elevated .
- primary biliary cirrhosis

4- 5' Nucleotidase :

- This enzyme is similar to alkaline phosphatase (present in bile duct walls)
- It is requested when there is doubt as to whether the raised alkaline Phosphatase is of hepatic origin , or from bones .
- 5' nucleotidase is only confined to the liver

5- Prothrombin time : Low prothrombin (prolonged time) may result either from :

- Severe liver cell damage (corrected partially by vit K)
- Obstructive jaundice (corrected completely by vit K)

6- Albumin :

- A falling serum albumin is of bad prognosis in liver disease
- It is always very reduced (below 2 gm) in advanced liver disease , and Predisposes to ascites الإستسقاء

7- Immunoglobulins :

- Frequently increased in chronic liver disease
- The type of Ig may be of particular value :
  - Ig G is predominant in autoimmune chronic hepatitis
  - Ig M is predominant in primary biliary cirrhosis

8- Total Globulins :

- Commonly increased in chronic liver disease and cirrhosis
- It is not relied upon at present , as it is not specific to liver disease and has been superseded by other tests .

Renal function tests

A group of tests usually considered together , which are directed to examine different aspects of renal function :

1- Glomerular structure : urine examination : excessively leaky : protein or red cell casts .

2- Glomerular filtration rate :

- Blood urea & Creatinine .
- Urea & creatinine clearance

3- Tubular function : specific gravity , water concentration & dilution tests

Blood urea

- Normal value : 20- 40 mg/dl
- Increased in :
  - Glomerular disease : acute and chronic renal failure .
  - Urinary tract obstruction
  - Decreased renal perfusion (flow) at shock or dehydration .
- A moderate increase (40 – 80) may be seen normally in:
  - Old age
  - Very high protein intake
  - Increased catabolism : trauma (surgey) , infection , cortisone .

Blood Creatinine

- Normal value : 0.6 – 0.9 mg/dl
- Higher values reflect the degree of glomerular failure more accurately than estimation of blood urea
- False values may occur in :
  - Wasting diseases (in which there is muscle breakdown)
  - Edema
  - Obesity
  - • Pregnancy

Creatinine Clearance

- It denotes the volume of blood / minute which are cleared from creatinine
- Procedure :
  - Urine is collected over 24 hrs
  - Creatinine is measured both in the urine (U) and blood (B)
  - Urine flow (V) is calculated by volume time in min
  - Clearance is calculated from the formula (Normal value : 6 – 142 ml/min)

$$\text{Creatinine clearance} = \frac{U \times V}{B} \times 100$$

Concentration ability of the kidney

1- Fluid withdrawal :

- The patient is deprived from drinks after 4 p.m.
- The morning specific gravity is expected to exceed 1.020 or osmolatitymore than 550 mosm / kg

This procedure is a test of the pituitary to secrete ADH and the kidney's ability to respond

2- Vasopressin test :

- More simple
- 20 microgram of Desmopressin into each nostril at 5 p.m.
- The last evening and first urine samples are tested for specific gravity or somolality

For the success of these tests , glomerular filtration must be normal or near normal .

Tests of tubular function are of value in the differentiation of glomerulonephritis from diseases affecting tubules primarily e.g. pyelonephritis , analgesic nephropathy ....

Endocrine Disorders

Tests of Thyroid Functions

a. Free thyroxin (T4) : 0.7 – 1.7 ng/dl
b. Free Tri-iodothyronin (T3) : 1.7 – 4.1 pg
c. TSH : less than 5 u / dl

Special test .

1- Radioactive Iodine tests : thyroid uptake of radioiodine
2- Thyroid antibodies : of value when autoimmunity is suspected
3- Thyrotrophin releasing hormone (TRH) : given IV stimulates hypothalamus which stimulates in turn the pituitary to secrete TSH (This helps to differentiate primary (Thyroid) from pituitary hypothyrodism .

- In primary hypothyrodism : there is exaggerated response
- In piyuitary hypothyrodism : no response

Hyperthyrodism :

1- High T3 and T4
2- High neck radioactive uptake : not suppressed by T3

Hypothyroidism :

1- High serum TSH : most valuable and sensitive test
2- Low free hormones (T3 and T4)
3- Increased serum cholesterol
4- Low neck radioactive uptake

Tests of Adrenal function

Cortisol :

- plasma cortisol : measured twice (morning and evening)
  - a.m. : 10 -25 microgram / dl (Normally higher than p.m.)
  - p.m. : 5 – 10 microgram / dl
- In 24 hours urine : less than 10 microgram / 24 hrs

Testosterone :

- Male : 0.48 – 1.46 ng / dl daily
- Female : 0.035 – 0.07 ng /dl

Calcium

Normal blood calcium :

Total : 9 -11 mg /dl
- Ionized : 4 – 5 mg /dl

Cuases of hypercalcemia :

- Hyperparathyrodism (primary and tertiary)
- Excessive intake of vitamin D or Calcium
- Sarcoidosis
- Secondaries in bones
- Multiple myelomatosis
- Paget's disease
- Malignant disease (not involoving bone)
- Osteoprosis due to immobilization
- Hyperthyrodism

N.B. A false increase of calcium may result from venous stasis during the intake of sample

Causes of hypocalcemia :

- Diet lacking calcium and vitamin D (rickets and osteomalacia)
- Mal-absorption syndrome
- Hypoproteinemia due to various causes
- Hypoparathyrodism
- Acute pancreatitis
- Anticonvulsant drugs
- Renal tubular acidosis
- Medullary carcinoma of the thyroid (Secreting calcitonin)

Blood Enzymes in different diseases

Myocardial infarction

1- Creatine phosphokinase (CPK) : 2.5 – 17 u /dl : rises very early . within few hours but returns to normal after 3 to 4 days
2- Lactic dehydrogenase : (1 – 174 / dl) : significant rise delayed till 2-3 days , but it lasts longer and is considered specific
3- Transferases (transaminases) : rise within 1-2 days

Liver Disease

1- Liver cell damage : release of cytoplasmic enzymes (Transaminases)
2- Obstructive jaundice : release of membrane related enzymes e.g. alkaline phosphatase (3-30 u/dl) , 5' nucleotidase (0.3 -1.7 u/dl)

Muscle Disease

(myopathies – polymyositis)

1- Creatine phosphokinase (CPK) : 2.5 -17 u/dl
2- Aldolase (0.05 – 0.76 u /dl)
3- Transferases

Acute pancreatitis

Alpha-amylase : 0- 180 u /dl

Cancer prostate

Acid phosphate : total 0.1 -0.5 u /100ml

Chapter -20 Toxicology

There are 4 broad lines to be applied in any case of acute intoxication :

- First aid : supportive care
- Prevention of further absorption of poison
- Methods to increase elimination of poison
- Antidote : for certain posions

1- First Aid (supportive Care) :
Measures taken at once to sustain life until the patient is transferred to hospital

A- Anoxia :
- Place the patient on his left side , head tilted up .
- Clear airway :
  - Remove secretions and oilier foreign material
  - The tongue is drawn forward
  - Insert an oropharyngeal airway to keep the tongue from falling back
  - If not adequate : mouth to mouth breathing
  - Oxygen inhalation in the highest concentration

B – Cardiovascular collapse :
- Head down position
- Warm the patient
- IV saline & glucose

C- Twiches or convulsions : 10 mg valium (diazepam) Amp IV .

D- Ingested alkalies : dilute immediately with 200 ml of water or milk .

2- Prevention of further Absorption of the poison :

1- Empty stomach : to remove ingested poison :
- Indicated in all cases of ingested posions , chemicals or drugs except corrosive , acids and petroleum (kerosene)
- Induce vomiting if the patient is conscious with intact reflexes .
  - Gag reflex : a finger down the patient's throat .
  - Drinking concentrated salt solution
- Stomach wash if the patient is confused or comatosed .

2-Give activated charcoal 10 tab either orally or through large gastric tube :
- Effective for adsorbing almost all poisons
- If the patient is comatosed :
  - Give Narcan (4mg) + Thiamine 100 mg + Glucose 25 % 100 ml (IV)
  - Intubate : pending connecting to ventilator when necessary .

3- Elimination of the poison :
1- Forced alkaline diuresis : Sodium bicarbonate 1-2 amp. added to saline

at a rate to keep the urine PH on the alkaline side

2- Peritoneal or hemodialysis : for severe cases

4- The Specific Anti-Dote :

Subject	*Anti-Dote*
1- Scorpion and snake bites	*antivenom serum*
2- Organic phosphate	*Atropine – Palidoxime*
3- Opiates	*Naloxone*
4- Metals	*Dimercaprol – penicillamine – EDTA*

Corrosives (Caustic Chemicals)

Treatment :

At once → Water or milk by mouth liberally , mainly as diluent

Then →

- Liquid antacid e.g. Mucogel oe Epicogel : 50 – 100 ml every 2 hrs
- Pethidine 50 mg IM to alleviate pain (dose may be increased or repeated as necessary)
- Zantac Amp every 8 hrs
- Nasogastric suction

Severe cases with deep ulcers (seen by endoscopy) :

- Pencillin G 2 million U every 4 hrs IM , or 1 gm ampicillin every 8 hrs
- Prednisolone e.g. Hostacorten 25 mg Amp x 21 day IM
- Fluid replacement and anti-shock measures in severe cases
- Keep patient under observation especially for signs of perforation

The oesophagus is damaged in all cases but to a varying degree → Follow-up is necessary to evaluate the stricture formed and the appropriate type of treatment (dilatation or surgery)

Carbolic acid (phenol)

Treatment :

- Olive oil or vegetable oil 100 ml may delay absorption
- Hemodialysis may be required if acute renal failure occurs
- Renal damage is first evidenced by hematuria
- Same supportive measures as in corrosives

Kerosene

At once → 250ml liquid paraffin

No stomach wash should be attempted

Special Care : Chemical pneumonitis (inhalation)

- Penicillin G : 1 million U / 4 hrs
- Hydrocortisone e.g. Flebocortid 100 mg / 6 hrs

Organophosphorous Poisoning

Symptoms :
Mild :
- Nausea , Vomiting , abdominal pain
- Dizziness – irritability
- Hypersalivation
- Bradycardia

Severe :
- Flaccid paralysis , including ocular and respiratory
- Pulmonary edema and copious secretions from mouth
- Convulsions & Cyanosis
- Hyperglycemia

Treatment :
1- Remove contaminated clothes & wash skin by soap and water to prevent further absorption from skin
2- Give the following :
A- Atropine (blocks receptors) :
  - 2 mg (2 Amp) IV at once
  - Repeat the same dose every 5- 10 minutes until signs of atropine side effects appear : dry mouth – dilatation of pupils – heart rate 70 to 80

B – Protopam chloride (Palidoxime) :
  - 1 gm Amp (Cholinestrase reactivator) :
  - Indicated in moderate to severe cases : 2 ampoules diluted with 10 – 15 ml water and given by slow IV
  - Improvement in muscle power expected within 30 minutes
  - Repeat if necessary in severe cases : 1-2 doses
  - Maximum dose = 12 g IV or IM / 24

3- Supportive measures :
- Convulsions : Valium Amp 10 mg (diazepam) IV or IM
- Pulmonary edema : Oxygen inhalation – put to ventilator

Opiates Intoxication

Symptoms : Drowsiness – Respiratory depression – Pin point pupil

Treatment ;
Antidote :
- Narcan (naloxone) 0.8 mg Amp : 1 to 3 Amp IV every 5 minutes until evident of clinical response or until 12 Amp (9.6 mg) has been given .
- Effect lasts 1-4 hrs
- Repeat within 1 to 4 hrs if signs of toxicity (papillary constriction – depression of respiration) still persist .

Datura-Atropine

Treatment

- Fllow stomach lavage with sodium sulphate 30 g in 200 ml water
- Fever and hyperthermia : cold water fomentations
- Severe tachycardia : prostigmin 2.5 mg Amp IV very slowly over 10 min , with ECG monitoring .

Cocaine

Treatment :

- Maintain airways - Put to ventilator if necessary
- Convulsions : Valium Amp 10 mg IV + Epanutin Amp may be added
- Inderal 1 mg Amp : 2-4 Amp IV to control tachyarrhythmias

Acute Intoxication of Ethyl Alcohol

Treatment :

- Stomach wash
- Mild cases : observation until recovery
- Severe cases :
  - Circulatory collapse : plasma expanders + Amp levophed or Aramine
  - Hemodialysis is indicated in severe cases not responding to above treatment .
- Put on ventilator if signs of respiratory depressions persist in severe cases
- Coramine (Nikethamide) Amp IV repeated as necessary
- Glucose 20 % 500 ml to correct hypoglycemia and ketoacidosis
- Add insulin if the patient is diabetic
- Sod bicarbonate 1.4% or 5% 500 ml to Correct lactic acidosis
- Benerva or Betaxin (Thiamine) 25 mg Amp IV daily

Methyl Alcohol

Treatment :

- Stomach wash
- Warm the patient
- Sodium bicarbonate infusion (for acidosis) : 5% 500 ml bottle
- Antidote : ethyl alcohol which should be given early (inhibits alcohol dehydrogenase which converts methyl alcohol to its toxic metabolites)
  - 50 gm orally followed by 8 to 10 gm / hour IVI to produce blood Concentration of 1-2 gm / liter

  OR :
  - • 60 gm orally followed by 9 gm/15 minute (1gm = approximately 5 ml 20 % ethyl alcohol)
- Calcium leucovorin (Folinic acid) 30 mg vial IV / 6 hourly

to protect against ocular toxicity
- Hemodialysis : severe cases – Ethanol 1-2 gm added to 1 liter of dialysis fluid .

Amphetamine And Related Drugs

Symptoms :
Insomnia – Hallucinations – Hypertension
Severe : Convulsions – Hyperthermia – Coma

Treatment :
- Largactil (Chlorpromazine) + Inderal (Propranolol) 1 mg Amp
- In severe Cases : Epanutin Amp + ice packs + artificial ventilator may be needed
- Acid diuresis to help excretion

Toxicity with Drugs

Anticoagulants

Treatment :
- Stop drugs given
- Oral anticoagulants : Konakion (Vit k) 10 - 50 mg IV slowly
- Heparin antidote : Protamine sulphate 50 mg Amp IV Slowly

Salicylates

Symptoms :
- Hyperventilation .
- Tinnitus – deafness
- Vasodilatation – Sweating
- Coma : uncommon → indicates very severe poisoning

Stomach Wash : in all cases (mild and severe) even after the lapse of several hours .

Treatment :
Mild cases :
- High intake of oral fluids + activated charcoal
- Observe for 12 – 24 hours

Severe cases : When serum salicylates is greater than 50 mg /dl (in adults) 30 mg /dl (in children)
- Forced alkaline diuresis to reach urine PH more than 8
- 50 gm Activated charcoal (charcoal or ultracarbon) 0.25 gm tab (200 tab) every 4 hrs .
- Convulsions : Amp valium 10 gm (diazepam)
- Konakion Amp (vit K) 10 mg IV to prevent hypoprothrombinemia

Very severe : with failure of the above mentioned measures or development of cerebral edema or renal failure → peritoneal dialysis or hemodialysis .

Benzodiazepines

Symptoms :
- Drowsiness

- Weakness – ataxia
- Respiratory depression
- Hypotension – hypothermia
- Coma

Treatment :

- Stomach wash in all cases
- Mild cases : Recovery is the rule without specific treatment discharge after a short period of observation
- Severe cases :
  - Oxygen in high concentrations
  - Insert an endotracheal tube → allows suction of mucus + ready to Connect to a mechanical ventilator if cyanosis is not relived .
  - Hypotension : raise foot of bed + Amp inoiropin (dopamine) IVI
  - Antidote : Anexate (flumazenil) 0.5 mg Amp given in increasing doses of 0.2 – 0.3 – 0.5 mg at 1 min intervals until a good response is obtained or a total dose of 3 to 5 mg is given

Antidepressants

Symptoms :

- Anti-cholinergic manifestations : fever – mydriasis flushing – retention of urine – decreased bowel motility
- CNS manifestation : restlessness – myoclonus – confusion – convulsions – coma .
- Cardiac manifestation : A-V blockade – cardiac arrhythmias

Treatment :

- Essentially supportive measures
- Stomach wash is followed by activated charcoal with cathartics / 2-4 hours
- CNS manifestation : Prostigmine Amp 2 mg IV very slowly over 2 minutes + convulsions : Amp valium
- Cardiac manifestation :
  - Arrhythmias → Lignocaine infusion
  - Hypotension → Dopamine
- Hemodialysis has no effect because of the large volume of drug distribution

Paracetamol

No specific antidote

Main fear is liver necrosis : N-acetylcysteine and methionine protect the liver if given 10 -12 hrs .

- Parvolex (Cysteamine) 2 gm Amp : 150 mg /kg in 200 ml glucose IV slowly over 10 minutes by infusion then 1000 mg /kg in 500 ml 5 % dextrose 4 hourly for 12 hours .
- Hepsan : (acetyl methionine) Amp / 4 hourly . Repeat for 4 doses or methionine 250 mg tab : 10 Tab (2.5 gm) ingested / 4 hourly for 12 hrs (4 doses = 10 gm)

Digoxin

Mild cases : Nausea + Ectopic beats
Potassium chloride orally : Potassium syrup : 1 teasponful x 3 day or slow k tab 1-2 day
More severe cases : Persistent vomiting – confusion – heart block (all degrees) or arrhythmia (all types) – vision disturbances potassium changes :

- Hyperkalemia occurs with acute intoxication
- Hypokalemia is common with chronic intoxication

Treatment :

- Discontinue drug
- *If there is hyperkalemia* :
  - 500 ml glucose 25 % + insulin soluble 30 u
  - Kayexalate
- *If there is hypokalemia* :
  - K chloride 0.2% in 5 % dextrose (500 ml) infused over 1 hour with continuous ECG monitoring → Stop drip immediately if sinus rhythm is restored , or if peaking of T waves returns to normal
  - Repeat if necessary up to 1 gm potassium chloride .
- *Severe cases* :
  - Digoxin antibodies 40 mg vials : dose 5 – 10 vials in an adult
  - Inderal (propranolol) 1 mg Amp IV → counteracts ectopic beats
  - And tachyacrdia . Repeated if necessary
  - Atropine 1 mg Amp IV to counteract bradycardia .

Cyanide

Treatment

- Cardio-respiratory support , as necessary
- Pure oxygen inhalation
- Amyl nitrate vitrille inhalation : (Amp crushed) / 12 sec for 2-3 min until the antidote is available
- Antidote : Kelocyanor (Dicobalt edetate) is the antidote of choice : 20 ml amp (300 mg) IV over 1 min followed by 50 ml glucose 50% . Repeated if necessary .
- Sodium nitrate : 10 ml Amp IV over 3 min followed by sodium thiosulphate 25 ml 50% given over 10 min. if Dicobalt edetate is not available .

Carbon Monoxide

Treatment :

- Pure oxygen inhalation (100%)
- Put on ventilator if necessary
- Packed red cell transfusion
- Manntiol 10-20 % + Epidron or Fortacorten 8 mg IV if cerebral edema is suspected .

Snake Bites

Symptoms :
Local : pain and swelling
Systemic : Vomiting – diarrhea – abdominal pain – nervous irritability

Treatment :

- Xylocaine 2 % : 2 ml injected at the site of the bite → immediate relief of pain
- To delay absorption of the poison :-
  - press firmly on site of bite
  - Immobilize limb with a splint
- Antidote :
  - Anti-snake venom polyvalent serum (Agouza) : 5 and 10 ml / amp
  - Start with 1-2 Amp added to Hartmann's Solution or saline – glucose and infused IV slowly . From 1 to 10 Amp may be required to neutralize the poison .
- Hypersensitivity reactions are very common :
  - One Amp adrenaline may be given SC as prophylaxis
  - If reactions appear another amp of adrenaline + 2 amp 100 mg hydrocortisone added to solution
- Supportive measures :
  1- Pain : pethidine 50 mg amp
  2- Largactil 50 mg amp IM for nausea and vomiting
  3- Shock : plasma or Dextran + Aramine (metaraminol) amp 10 mg or levophed 0.1 % Amp or Dobutrex (dobutamine) infusion + Hydrocortisone succinate IV up to 200 mg .
  4- Bleeding tendency : fresh blood or plasma

Scorpion Bites

Symptoms :

Local : pain and swelling

Systemic : Vomiting – diarrhea – abdominal pain – nervous irritability

Treatment :

- Xylocaine 2 % : 2 ml injected at the site of the bite → immediate relief of pain
- To delay absorption of the poison :-
  - press firmly on site of bite
  - Immobilize limb with a splint
- Antidote :
  - Anti-scorpion serum 1 ml Amp (Agouza) : 1-2 Amp IM
  - Test for hypersensitivity
- Supportive measures :
  1- Pain : pethidine 50 mg amp
  2- Largactil 50 mg amp IM for nausea and vomiting
  3- Shock : plasma or Dextran + Aramine (metaraminol) amp 10 mg or levophed 0.1 % Amp or Dobutrex (dobutamine) infusion + Hydrocortisone succinate IV up to 200 mg .
  4- Bleeding tendency : fresh blood or plasma
  5- Bradycardia : atropine : 0.5 – 1 mg amp.

Chapter -21
Fluid Replacement

Fluid Assessment

	Hypovolemia	Hypervolemia
BP	Systolic 100 or less	*Normal or high*
Pulse rate & volume	Tachycardia , small volume	*Normal rate , big volume*
Central venous pressure	Zero	*High*
Urine output	Little or nil	*Normal*
Hematocrit	Increased	*Decreased*
Skin turgor	Loss of elasiticty	*Normal or peripheral edema*
Tongue	Dry	*Wet*
Chest X-ray	Normal	*Pulmonary edema if extra-vascular space is ↑ by 20 %*
Balance fluid charts	-ve : more fluid lost than intake	*+ ve : more fluid input than lost*

Fluid replacement

1- Water & Electrolytes

Water :

- Glucose 5% solution is used mainly to replace water loss .
- It should be given alone when there is no significant loss of electrolytes : postoperatively – coma – fevers
- It is also given when the patient is first admitted to keep an IV line

Glucose :

Concentrated glucose solutions , Dextrose or fructose (20 % - 25% - 50%) are used to supply calories , when gastrointestinal feeding is not possible

Sodium chloride (Saline) :

- Indicated when there is combined water and sodium cholride loss .
- Normal saline 0.9 % (9 g / 1
- Hypotonic saline 0.4 % → If water is needed than salt

Sodium bicarbonate :

- Used to control severe metabloic acidosis
- Sodium bicarbonate 1.4 % , 0.5% 500ml bottles
- Sodium bicarbonate 8.4 % 50 ml vials

Ringer's solution (500 ml bottle)
Each ml contains : Ca cl 322 mcg + Kcl cl 300 mcg + Na cl 8.6 mg

2- Plasma Expanders

Used to expand and maintain blood volume in shock and hemorrhage (if blood is not available) as an immediate short term measure

1- Crystalloids : Saline : transient effect – mostly escape to interstitial space .

2- Mannitol :

- 5% , 10 % , 15 % , 20 % , 25 % in water .
- 20 % in 5 % dextrose .

3- Dextran (glucose polymers) : 2 forms according to molecular size : Dextran 40 – Dextran 70

- 10 % Dextran 40 in dextrose 500 ml .
- 10 % Dextran 40 in N saline 500 ml .
- 6 % Dextran 70 in normal saline 500 ml
- Dextran interfere with blood grouping test → so the sample should be taken before infusion .

→ 6 % Dextran expands blood by 130% of injected volume
→ 10 % Dextran remains about 3 hours
→ 30 % Dextran remains about 24 hours

Toxic effects :

- Anaphylaxis
- Bleeding (as it interferes with platelets and coagulation factors)

4- Gelatin : the same idea as Dextran

- Haemagel (Hoechst) :

Gelatin 4 % + Na + K + Ca : 500 ml bottle

1- Haemacel : Gelatin 3.5 % + Na + K + ca : 500ml bottle

Toxic effects : Anaphylaxis is more common

5- Albumin :

- 5 % Human albumin 250 ml (Immuno)
- 15 % Human albumin solution (Agouza) 70 ml bottles
- 20 % , 25 % salt poor albumin , 50 ml (Kabi – Immuno)

N.B. : Albumin is an excellent volume expander , particularly in the hypovolemic patient with low serum albumin , typically in liver cell failure but its high price limits its use .

What is the fate of fluids after infusion ?

- Blood – plasma – colloids (albumin – gelatin – Dextran - mannitol) : mainly to intravascular and remain within vascular tree
- Crystalloids (saline - Ringer's solutions) : mainly to interstitial space
- Glucose 5 % : mainly to intracellular space

Which fluid to be used for resuscitation ?

- Intra vascular space (plasma expanders) : blood or colloid

- Crystalloids (saline etc.) are not efficient plasma expanders ; less than 25% remain intravascularly : used temporarily until plasma expanders become available .
- Interstitial space : saline - Ringer's - Hartmann's
- Intracellular space : 5 % glucose .

3- Blood Transfusion

Indications :

1- Acute blood loss : Showing signs of hypovolemia

2- Severe anemia:Hb 7 gm or loss (in cardiac or respiratory diseases 9 gm or loss)

Acute blood loss :

Indications for immediate blood transfusion :

- pulse rate : 110 or more
- Systolic pressure : 100 or loss
- Hemoglobin : 9 gm or less
- Hematocrit : 60 or more

Type of blood requested :

Whole blood as it increases both O2 carrying capacity and volume expansion

Until blood is available :

If the patient's conditions is very serious and cannot wait cross-matching , use

- Plasma expanders until blood become available
- Saline
- Plasma or 5 % albumin
- Mannitol
- Alternatively , blood group O Rh –ve can be used if the specific type is temporarily unavailable .

Do not use :

- Glucose 5 % as it is harmful to red cells
- Dextran solutions : Dextran 70 interfers with platelet function & red cell agglutination causing confusion with blood grouping . Dextran 40 does not affect platelet function but leaks out in 12 -18 hrs

Severe Anemia :

- Packed red cells .
- One bag increases HB by 1 gm .

Complications of blood transfusion

A-Transfusion reactions :

1- Allergic reactions :

Clinically : Pruritus – Urticaria – rarely bronchial asthma

Treatment :

- Stop transfusion

- Avil (Pheniramine) 50 mg Amp IV

Subsequent allergic reactions can be prevented by : the use of red cells or platelets dial have been washed to remove plasma proteins (usual allergens)

2- Febrile reactions :

Slight reactions : (less than 37.8 C) usually due to pyogens (dead bacteria) → Give Aspirin or Novalgin

Severe reactions : usually occur within 4 hours after the transfusion and may last up to 36 hours due to immune reactions between recipient antibodies and donor white cells and platelets .

3- Hemolytic reactions :

Causes :

- Usually due to incompatibilty as a result of error (mismatching)
- Damage of the blood : time expired – bacterial contamination – freezing – overheating .
- Bacterial infection of the patient .
- Administeration of hypnotic fluids (glucose 5 %) in excess .
- Acute hemolytic anemia .

Manifestations : usually begin within minutes , after 50 ml or less of blood have been given :-

- Severe lumbar pain (pathognomonic) .
- Rigors - Throbbing headache
- Precordial pain - fever
- Dyspnea - Hypotension
- Shock - Jaundice

If the patient is comatosed (غائب عن الوعى) or shocked , symptoms of hemolysis may not be felt , objective signs include :

- Flushed face followed by cyanosis
- Distended neck veins
- Sweating
- Cold skin
- Profound shock
- Jaundice

Dangers of hemolytic reactions :

- Shock
- Disseminated intravascular coagulation (DIC) → Wide spread bleeding into skin and orifices الفتحات

Treatment :

- Stop transfusion at once .
- Save the remaining donor's blood to be cross-matched again .
- Give 5 % albumin to prevent vascular collapse or mannitol 20 5 over 5 minutes .
- Lasix (frusemide) 2 amp. Repeat after an hour if urine output does not increase .
- Give 4-5 gm sod. Bicarbonate IV (50 ml 8.4% amp) to make urine alkaline . It may also improve the solubility of the hemoglobin degradation products released by the hemolysed red cells .

N.B. Delayed reactions : rarely , hemolysis occurs 14 days after transfusion from the slow formation of antibiotics against red cells

B – Infections ;

All types of infections circulating in the blood can easily be transferred by blood transfusion , most of these infections can be detcted routinely in blood banks e.g. malaria , syphilis , hepatitis B & C and HIV infection (AIDS) .

C- Massive transfusion reactions (> 3 liters) :

1- Hypothermia : may result from the use of large amounts of refrigerated stored blood so units of blood (bags) must be warmed before use .

2- Metabolic : Stored whole blood contains excess potassium , ammonium and citrate .

- Citrate toxicity : expected to occur in patient with liver dysfunction : add 1 amp 10 % Ca gluconate .
- Hyperkalemia : expected to occur in renal failure .
- Hypokalemia : occasionally occurs folllowing massive transfusion .

3- Mechanical circulatory overload : which may cause pulmonary edema

4- Coagulation abnormalities :

- Usually due to platelet washout , rarely due to depletion of factor VIII
- Check platelet count and coagulation tests . Give 10 units of platelets if necessary.

5- Anaphylaxis :

- Antibodies to IgA may develop with repealed transfusion which may result in bronchospasm and shock .
- Give 0.5 amp adrenaline IV + Avil amp (IV) + Hydocortisone 100 mg amp IV at once which may be life-saving .

Components available in blood Banks

1- Red cells :

- Whole blood :one unit : 450 ± 50 ml including anticoagulant . Few platelets and coagulation factors (VIII , V) remain after a few days of storage . Storage period : 28 days at 4-6 ºC
- Packed red cells : one unit : 300 - 350 ml . Much of plasma is removed
- Leucocytes poor red cells
- Frozen red cells : used only to store rare blood types
- Washed red cells : red cells suspended in saline solution , one unit 300 ml .

2- Platelets :

- Platelets packs : One unit 50 ml conatins : 5 -10 x 10^{10} platelets . Can be stored for 5 days . one unit elevates the count by 10.000 platelets .
- Washed platelets : One unit 10 ml in washed solution .
- fresh blood .

3- Coagulation factors :

- Fresh plasma : from a single donor
- fresh frozen plasma : 200 ml . conatin all coagulation factors in a well-preserved state . Can be stored for 1 year – Fibrinogen is present 3-4 mg / ml – All other factors 1 U / ml including anti-thrombin , proteins C and S .
- Plasma protein fraction (PPf) : 4.5 % solution of human albumin in saline (400 ml bottles) .
- Cryoprecipitate : 10 ml contain 80 – 145 units of factor VIII and 250 mg of fibrinogen . Stored frozen . Lasts for one year .
- Lyophilized factor VIII : for hemophilia . Approximately 220 U per amp. Dilute before use with 10 ml saline .

4- White cells : Granulocytes are obtained by leukophoresis using a mechanial cell seperator .

Chapter-22
Reference Values

Laboratory test	Specimen	Conventional Units	SI Units
Acid phosphatase (Total)	Serum	0 – 5.5 IU/L	0 – 90 nkat/L
Acid phosphatase (prostatic)	Serum	0 – 1 IU/L	0 – 16 nkat/L
Prostate specific antigen	Plasma	0 - 4 ng / ml	
Alkaline phosphatase	Plasma	30 -300 IU/L	0.5 – 2.0 µkat/L
AST (SGOT)	Plasma	5 – 35 IU/ L	5 – 35 IU/ L
ALT (SGPT)	Plasma	5 – 35 IU/ L	5 – 35 IU/ L
Protein (Total)	Plasma	6 – 8 gm / dl	60 – 80 gm / ml
Albumin	Plasma	3.2 – 4.5 gm / dl	35 – 55 gm/L
Bilirubin (Total)	Plasma	0.1 – 1 mg / dL	2 – 18 µmol/L
Bilirubin (Direct)	Plasma	0 – 0.2 mg / dL	0 – 4 µmol/L
Aldosterone	Plasma	100 – 500 pmol/L	
ACTH	Plasma	15 – 100 pg / ml	< 80 ng / L
Alfa-fetoprotein (AFP)	Plasma	< 25 ng / ml	
Alfa-amylase	Plasma	56 – 190 IU / L	25 – 125 U/L
Angiotensin II	Plasma	5 – 35 pmol / L	
Antidiuretic hormone (ADH)	Plasma	0.9 – 4.6 pmol / L	
Calcitonin	Plasma	< 0.1 µg / L	
Growth hormone	Plasma	< 10 ng / L	< 10 µg / L
Luteinizing hormone (LH)	Plasma	3 – 16 U / L	
Follicle-stimulating H (FSH)	Plasma / serum	2 – 8 U / L	
Prolactin (Male)	Plasma	< 450 U /L	2 – 14 ng / ml
Prolactin (Female)	Plasma	< 600 U /L	2 – 16 ng / ml
Parathormone (PTH)	Plasma	< 2000 pg / ml	
Thyroid-binding globulin (TBG)	Plasma	12 – 28 µg / ml	129 – 335 nmol / L
Thyroid-stimulating hormone (TSH)	Plasma	0.5 – 5.7 mU / L	
Thyroxin (T4)	Plasma	5 – 10 µg / dl	70 – 140 nmol / L
Free thyroxin (fT4)	Plasma	9 – 22 pmol / L	
Tri-iodothyronine (T3)	Plasma	110 – 230 ng / dl	1.2 – 3.0 nmol /L
Free iodothyronine (fT3)	Plasma	3.8 pmol / L	

Bicarbonate	Plasma	24 – 30 mmol / L	24 – 30 pmol/L
Renin (erect / recumbent)	Plasma	2.8 – 4.5 / 1.1 – 2.7 pmol/ml/h	
Vitamin B12	Serum	200 – 600 pg/ml	148 – 443 pmol/L
Folate	Serum	5 – 20 µg / ml	14 – 34 mmol/L
ABG : PH	Arterial Blood	7.35 – 7.45	
PCo2	Arterial Blood	35 – 45 mmHg	4.7 – 6 kpa
HCo3	Arterial Blood	22 – 26 mEq / L	21 – 28 nmol/ L
Pa O2	Arterial Blood	80 – 100 mmHg	11 – 13 kpa
O2 saturation	Arterial Blood	95 % - 100 %	
Urea	Plasma	5 – 20 mg / dl	2.5 – 6.7 mmol / L
Urate (Male)	Plasma	2.1 – 7 mg / dl	0.15 – 0.40 mmol / L
Urate (female)	Plasma	2- 6 mg / dl	0.10 – 0.30 mmol / L
Triglyceride	Plasma	40 – 150 mg / dl	0.60-1.80 mmol/L
Cholesterol	Plasma	150 – 250 mg / dl	3.9 – 6.5mmol/L
LDL	Plasma	50 – 190 mg / dl	1.3 – 4.9 mmol / L
HDL	Plasma	30 – 80 mg / dl	0.8 – 2.2 mmol / L
Creatine kinase (CK)	Plasma	0 – 130 u / L	0 – 2.16 µkat/L
Creatinine	Plasma	0.6 – 1.2 mg / dl	50 – 110 umol /L
Ferritin	Plasma	12 – 200 ng / ml	12 – 200 ug / L
Gamma-Glutamyl trans-peptidase (GGTP)	Plasma	0 – 30 U / L	0 – 0.50 ukat / L
Glucose (Fasting)	Plasma	70 – 126 mg / dl	3.9 – 7 mmol /L
Glycosylated haemoglobin	Whole Blood	5 – 8 %	
Lactate dehydrogenase	Plasma	90 – 200 Imu / ml	0.4 – 1.7 mmol / L
Iron	Serum	60 – 190 µg / dl	11 – 30 µmol /L
Lead	Whole Blood	< 120 µg / dl	< 1.0 µmol /L
Chloride	Plasma	90 – 110 mEq/L	95 – 105 mmol / L
Magnesium	Plasma	1.6 – 3.0 mEq/L	0.75 – 1.05 mmol / L

Potassium	Plasma	3.5 – 5.0 mEq/L	3.5 – 5.0 mmol/L
Sodium	Plasma	135 – 145 mEq/L	135 – 145 mmol/L
Phosphate (Inorganic)	Plasma	2.5 – 5 .0 mg /dl	0.8 – 1.45 mmol / L
Calcium (ionized)	Plasma	3.9 – 4.6 mg / dl	1.0 -1.25 mmol / L
Calcium (Total)	Plasma	9 – 10.5 mg / dl	2.25 – 2.75 mmol/L
Osmolalit	Plasma	٣٠٥ – ٢٧٨ mosmol/kg	

N.B : SI = System of international unit

Blood values

Blood values	
Red cell count (male)	4.5 – 6.5 million / mm
Red cell count (female)	3.9 – 5.6 million / mm
Hemoglobin (Male)	14 – 18 gm/ dl
Hemoglobin (female)	11 – 16 gm / dl
Packed red cell volume = (Haematocrit) (male)	42 % - 52%
Packed red cell volume = (Haematocrit) (Female)	37 % - 47%
Mean cell volume	76 – 96 fl
Mean cell hemoglobin (MCH)	27 – 31 pg
Mean cell hemoglobin concentration (MCHC)	30 – 36 gm / dl
White cell count (WCC)	4 – 11 X 1000 / cm3
Neutrophils (45-75%)	2 – 7.5 million / mm
Lymphocytes (20 – 45 %)	1.3 – 3.5 million / mm
Eosinophils (1 – 6 %)	0.04 – 0.44 million / mm
Basophiles (0-1 %)	0 -0.1 million / mm
Monocytes (2-9%)	0.2 – 0.8 million / mm
Platelet count	150 – 400 x 1000 / mm
Reticulocyte count (0.8 – 2.0%)	25 – 100 m / mm
Erythrocyte sedimentation	< 20 mm / hour
Prothrombin time (factors II , VII , X)	10 – 14 sec
Activated partial thromboplastin time (factors VIII , IX , XI , XII)	35 – 45 sec
INR	1
Bleeding time	2 – 7 min

Alphabetical Index for Disease Signs & Symptomes

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Alphabetical Index for Disease Signs & Symptomes

تتوفر سلسلة كتب اطلس فى جميع مكتبات كليات الطب والصيدلة بالقاهره والاقاليم

وايضاً تتوفر فى فروع صيدليات العزبى - رقم موحد ١٩٦٠٠

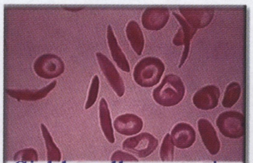
دار الكتاب الجامعى الاستاذ عبد المنعم ٠١٢٣٤٧٠٧٣٥	مكتبة الكتاب الطبى الأستاذ. صبرى الشال ٠١٢٣٤٠٤٩٨٧
دار الكتب الطبية الاستاذ محمد عبد الفضيل ٠١٠٥٧٠٥٤٩٨	
أ. عماد بجوار النقابة العامة للصيادلة - جاردن سيتى ٠١٢٩٦٧٧٧٣٠	
مكتبة برديس اما كلية صيدلة جامعة القاهرة - ٣٦٣٨٧٠٣	
الاسكندرية مكتبة الشروق ميديكال ٢شارع شمبليون - الازاريطة ٠٣٤٨٤٨٦٧٣ ☎ ٠٣٤٨٦٦٤٥٠	
الهداية ١١ شارع لؤلؤة الطائى - الازارية ٠٣٤٨٥١٧٨٠ - ٠٣٤٨٥١٧٨١	
الاسكندرية دار العلم الطبية - ٥ ش كلية الطب ٠٣٥٤٨٩٧٠٥	
الزقازيق : الاستاذ صلاح موسى ☎ ٠١٢٧٤٨٢٥٣٢	
الزقازيق : دار الكتاب الجامعى ☎ ٠١٢٢٧٩٣٩٧٦	
طنطا أ. فايز : ٠١٢٣٤٤٠٩٩٢ - ٠٤٠٣٣٢٧٠٧٨	
المنصورة الاستاذ هانى عيسى ٠٥٠٦٦٨٧٩٣٥ ☎ ٠١٠٧١٢١٣٩٥ ☎ ٠١٢٩٠٨٢٥٨٥	
المنيا مكتبة مصر (م/جوزيف) ٠٨٦ ٢٣٦٢٧٨٨ ☎ ٠١٢٧٨٥٧٥٤٣	
سما لوط د/سامح ثابت ٠١٢٤٨٧٠٤٠٦	
اسيوط : د/عماد اسحق ٠١٠٦١١٥٧٥٢٠	
لمزيد من الاستعلام عن اماكن التوزيع ت : ٣٨٧٤٦٣٥ - ٠١٠٢٠٠٠٥٣٩ - ٠١٢٦٢٥٥٠١١	

Alopecia


Alopecia areata


Complete alopecia = Alopecia totalis

Blood-diseases


Sickle cells anaemia

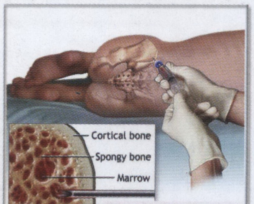
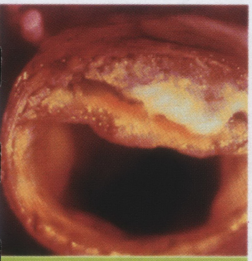
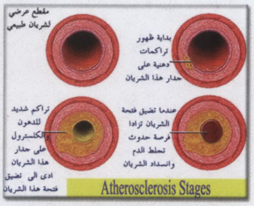


image shows Bone marrow aspiration
□ Bone marrow transplant offers the only potential cure for sickle cell anemia

Arteriosclerosis

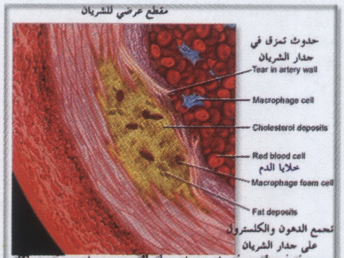

Atherosclerosis, in artery it leads to its narrwing



Atherosclerosis Stages



Arteriosclerosis



Tear in artery wall due to arteriosclerosis

Cardiovascular

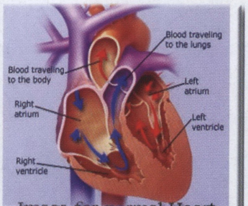
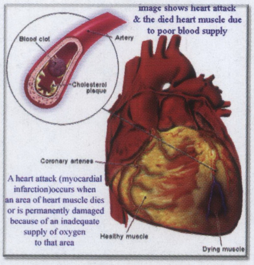
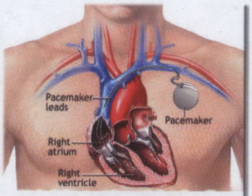


Image for normal Heart

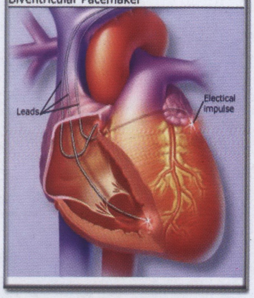
The normal heart rate is 60 to 100, but in atrial fibrillation/flutter the heart rate may be 100 to 175. .Blood pressure may be normal or low





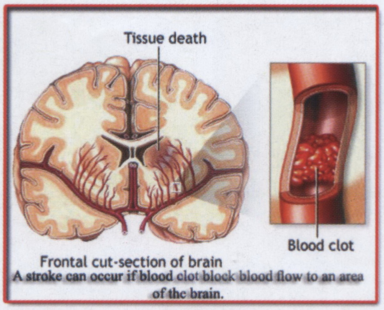
Mechanical treatment for ventricular tachycardias consists of implanting a device called implantable cardioverter defibrillator (ICD). The ICD is implanted usually in the chest, it works like a pacemaker, and it is connected to the heart with wires.

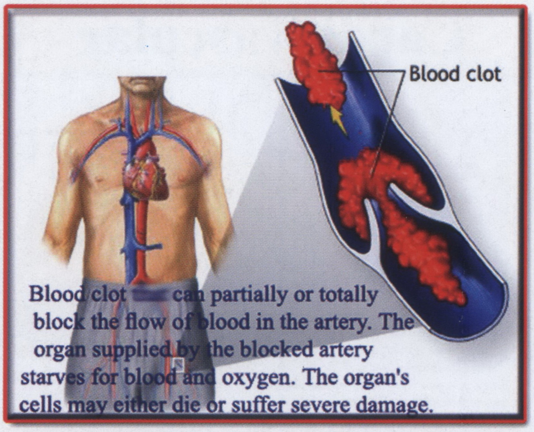
Biventricular Pacemaker

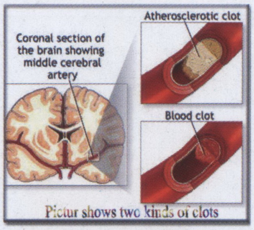


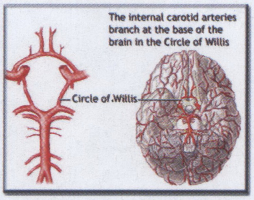

Rheumatic fever in mitral valve

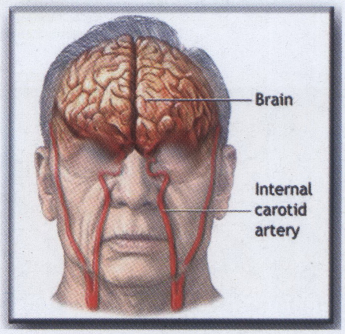
Cerebral-strock



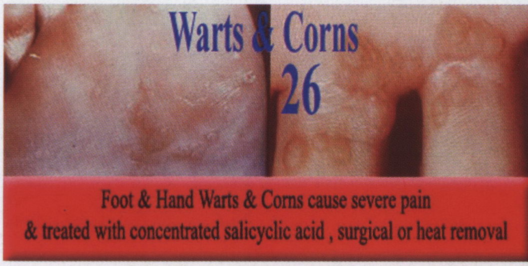


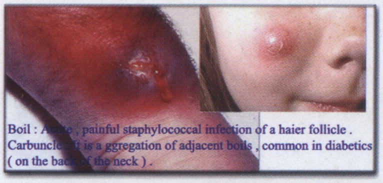






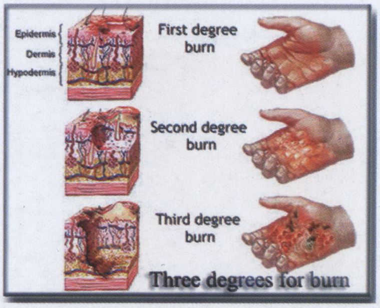
Dermatology



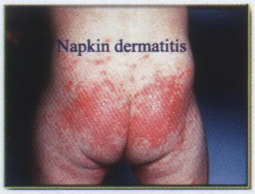










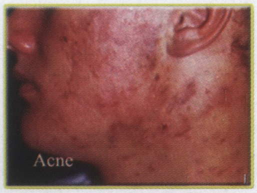






Symptoms:Severe itching mainly at night
Diagnosis : lesions consists of papules , burrows , vesicles marks
+ avoid contact with patient (e.g. sexual contact – sleeping beside the patient) also avoid dreesing the patient clothes
+under wear & bed Covers should be changed after each time of application during the 3 days of therapy


Fruncle or carbuncle




Onchomycosis



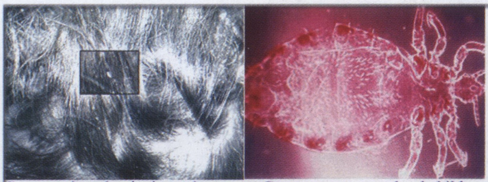
Tinea cruris :Well-defined peripherally spreading & Centrally clearing erythematus patch ± Vesicles + Itching .
Sites : Affects the upper medial side of the thigh , buttocks and pubic area .



Tinea versicolor : Affects the trunk , adjacent parts of upper arms and neck ,Coloured scaly macules , Few mm. to several cm. in diameter , whitish , brownish or rosy red in colour - Itching is absent.



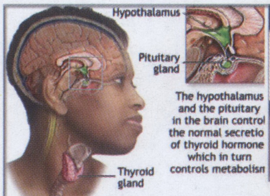


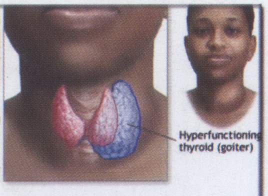


Common in unhygienic environment .Common among school children .
Methods of transmission : direct by head to head contact or indirect through combs and brushes .Diagnosed by finding the Nits on hair shafts or Lice on on skin or clothes + Itching .


Vitiligo affected skin changes over time, with some patches re-pigmenting and others becoming affected

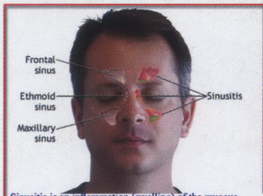
Endocrine sysem



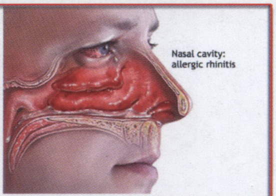


A simple goiter occurs when the thyroid gland is not able to produce enough thyroid hormone to meet the body's needs. The thyroid gland makes up for this lack by enlarging, which usually overcomes mild deficiencies of thyroid hormone

ENT (Ear, Nose &Throat)

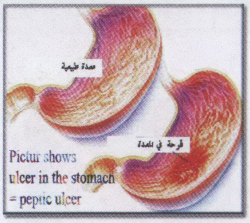


Sinusitis is an inflammation (swelling) of the mucous membranes that line the sinus cavities. This can interfere with normal sinus drainage and cause increased mucus production. Untreated and prolonged sinus inflammation can lead to infection and increased symptoms.

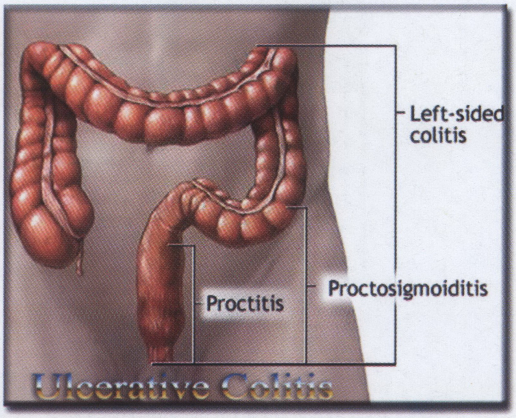


Allergic rhinitis is a collection of symptoms, predominantly in the nose and eyes, caused by airborne particles of dust, dander, or plant pollens in people who are allergic to these substances. When these symptoms are caused by pollen, the allergic rhinitis is commonly called hay fever.

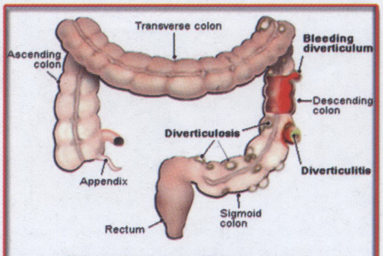
GIT



Pictur shows
ulcer in the stomacn
= peptic ulcer

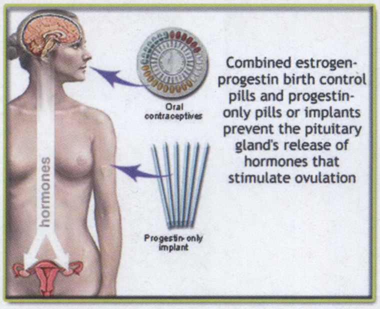


Ulcerative Colitis

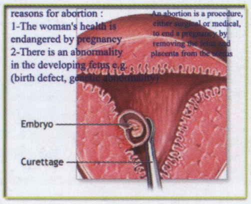


Diverticular Disease

Gynacology



Combined estrogen-progestin birth control pills and progestin-only pills or implants prevent the pituitary gland's release of hormones that stimulate ovulation



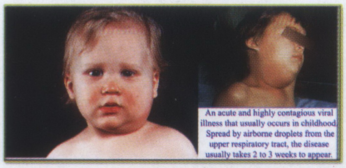
reasons for abortion :
1-The woman's health is endangered by pregnancy
2-There is an abnormality in the developing fetus e.g (birth defect, genetic abnormality)

An abortion is a procedure, either surgical or medical, to end a pregnancy by removing the fetus and placenta from the uterus

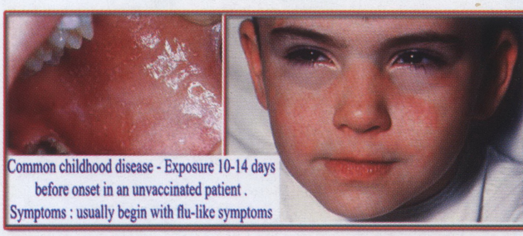
Infectious-diseases



A disease caused by an infection with A B-hemolytic bacteria



An acute and highly contagious viral illness that usually occurs in childhood. Spread by airborne droplets from the upper respiratory tract, the disease usually takes 2 to 3 weeks to appear.



Common childhood disease - Exposure 10-14 days before onset in an unvaccinated patient .
Symptoms : usually begin with flu-like symptoms



Lepromatous Leprosy type Leprosy is infectious & needs treatment for life , while tuberculoid leprosy only needs treatment for 2 years after disappearance of signs of activity .



Chickenpox has a 10-14 day incubation period and is highly contagious معدى by air transmission two days before symptoms appear. Following primary infection there is usually lifelong protective immunity from further episodes of chickenpox

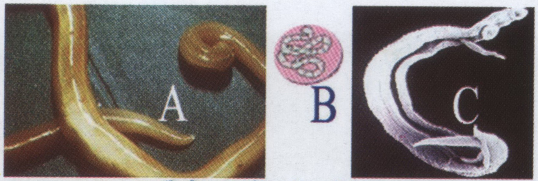




Chicken-pox caused by the varicella-zoster virus (VZV). Transmission occurs from person-to-person by direct contact or through the air.

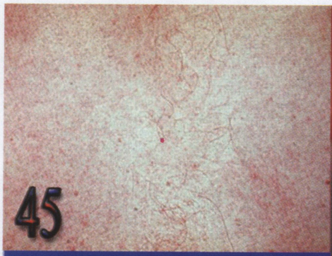


Malaria is a vector-borne infectious disease that is widespread in tropical and subtropical regions. It infects between 300 and 500 million people every year and causes between one and three million deaths annually



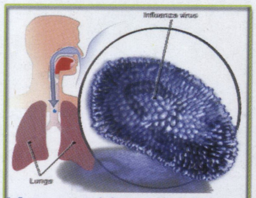
الديدان الشريطية B = tap worms

A=Ascaris worm 43 C = Bilharzias



German Measles spreaded allover the body



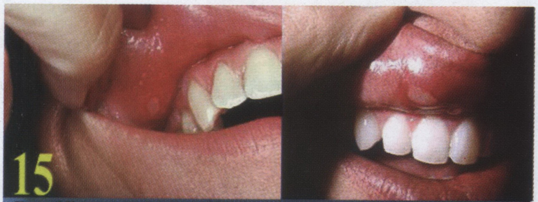


Influenza, commonly known as the flu, is an infectious disease caused by an RNA virus common symptoms of influenza infection are fever, nausea, vomiting, sore throat, muscle pains, severe headache, coughing, and fatigue



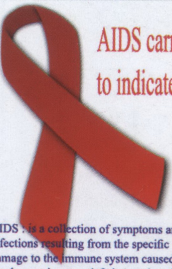
14-Gonorrhea

Gonorrhea - continous pain with White yellowish viscous discharge



Gum Ulcer may be due to any microbial ionfection due to low immunity due to psychic stress it cause severe pain when eating or when taking hot drinks

AIDS carrier Red Ribbon used in the USA to indicate that this person infected with AIDS

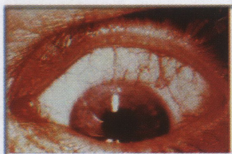




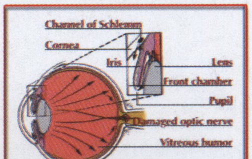
AIDS : is a collection of symptoms and infections resulting from the specific damage to the immune system caused by the human immunodeficiency virus (HIV)

Pictur shows HIV budding التبَرْعُم

Opthalmology



Trachoma is an infectious disease of the eye which,if untreated,leads to blindness
Causes : Caused by infection with the organism chlamydia trachomatis .



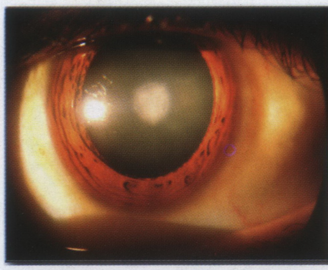
Glaucoma : is a condition of increased pressure inside the eye (intraocular pressure) , caused when the flow of the fluid within the eye (aqueous humor) is blocked .It can damage the optic nerve and cause vision loss .



Conjunctivitis Caused by viral , bacterial , chlamydial , fungal and parasitic agents (rarely) . Other causes are allergies (allergic conjunctivitis) , chemical exposure



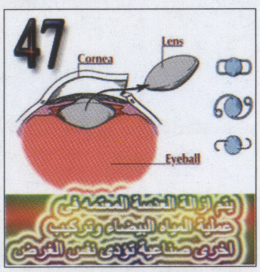
A chalazion is a cyst in the eyelid that is caused by inflammation of the meibomian gland, usually on the upper eyelid.may disappear on its own after a few months

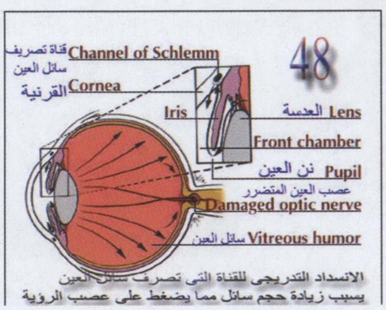




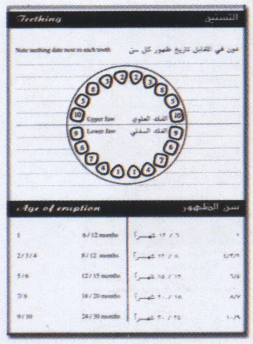
The lens of the eye is normally clear. If the lens becomes cloudy, the condition is known as a cataract. Rarely, cataracts may be present at or shortly after birth. These are called congenital cataracts.

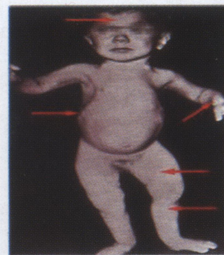




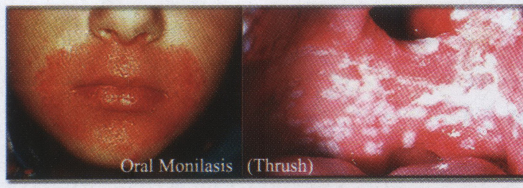


Pediatric

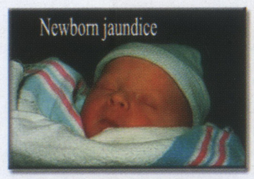




Rickets is the softening and weakening of bones in children, usually because of an extreme and prolonged vitamin D deficiency



Oral Monilasis (Thrush)

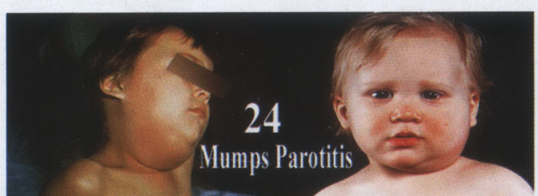


Newborn jaundice



التهاب الحفاض فى الاطفال
يسببة نوع الحفاض او عدم تغيير الحفاض
مباشرة بعد تلوثه - اهماله يسبب
تسلخات شديدة - زيت الاطفال يقى من حدوثه

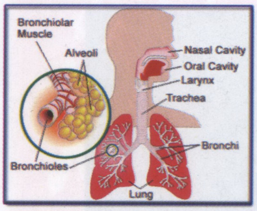
يسبب التهاب الحفاض احمرار
والم شديد ، من اسبابه تلوث بشرة
الرضيع من الفضلات او اهمال
تنظيف البشرة جيدا بعد تبرز
الرضيع - من الميكروبات التى
تسبب الالتهاب البكتيريا والفطريات

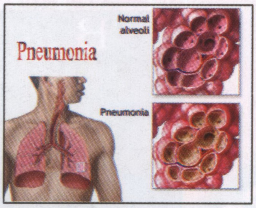


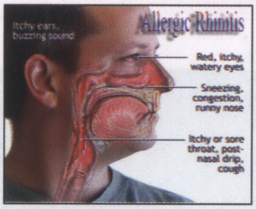
Mumps Parotitis

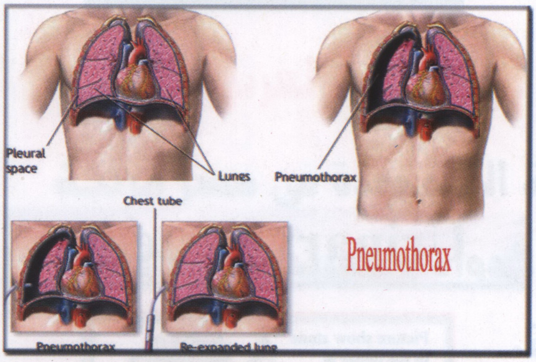
التهاب الغدة النكافية (النكاف او ابو اللكيم) منظر امامى وجانبى

Respiratory system

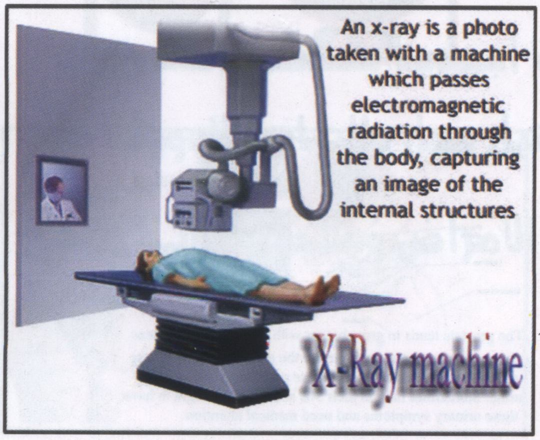


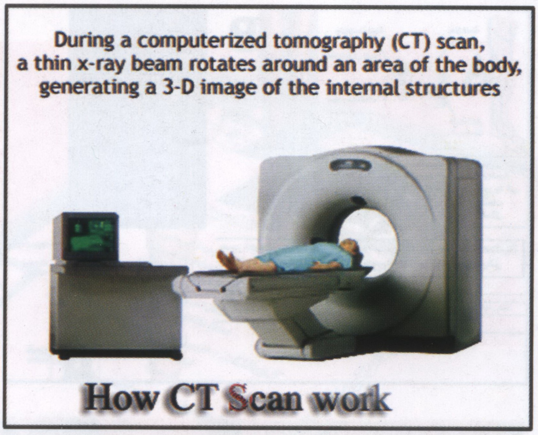


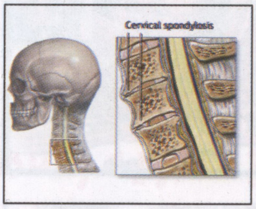


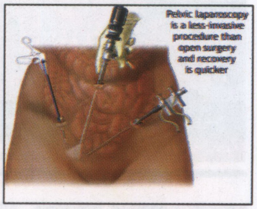


Skeleton



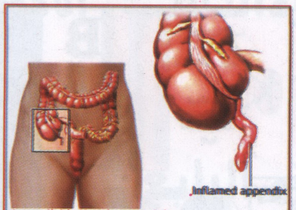




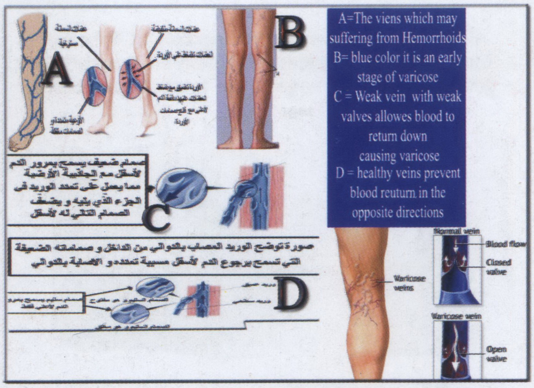


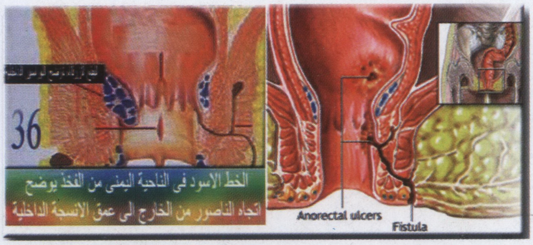


Surgiers

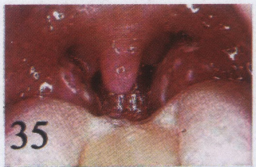


Appendicitis How happened the appendix loses the ability to fight infection and fecal bacteria begin to grow out of control. with the lack of treatment the walls of the appendix become gangrenous from the infection and lack of blood flow. As bacteria begin to leak out through the dying walls, pus forms within and around the appendix (suppuration متقيح). The end result of this is appendiceal rupture causing peritonitis, which may lead to septicemia تسمم الدم and eventually death.

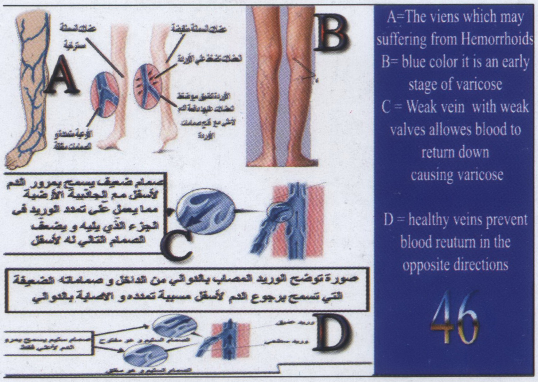








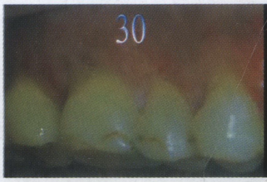
Tonsillits accompanied with redness and inflammation of the Throat



Teeth&Gum

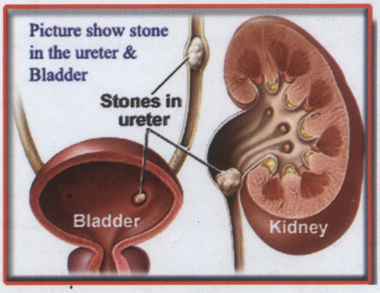


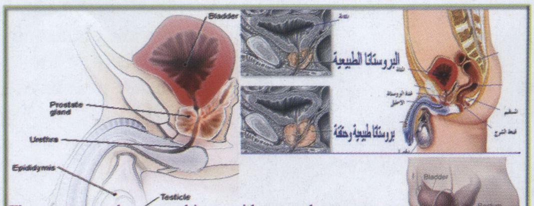
A = Gum Inflammation
B = Gum Inflammation with tooth cares



Severe inflammation & Gum Ulcer due to poor Hygeine

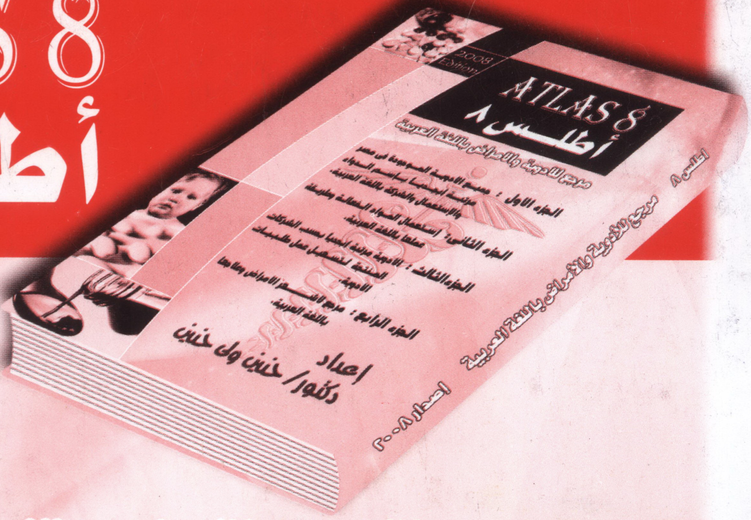
Urinary system





The prostate tends to grow bigger with age and may squeeze the urethra or -A tumor can make the prostate bigger -These changes, or an infection, can cause problems passing urine. Sometimes men in their 30s and 40s may begin to have these urinary symptoms and need medical attention.

ATLAS 8
أطلس ٨



مرجع للأدوية والأمراض باللغة العربية

الجزء الأول : جميع الأدوية الموجودة فى مصر مرتبة أبجدياً باسم الدواء والإستعمال والشركة باللغة العربية.

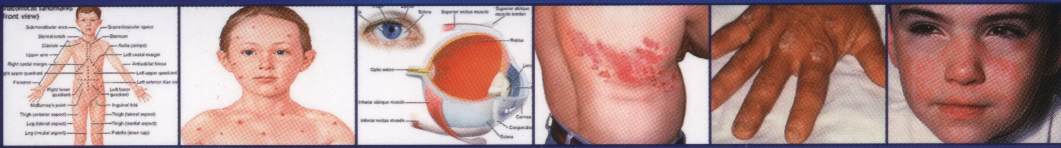
الجزء الثانى: استعمال المواد الفعالة وطريقة عملها باللغة العربية.

الجزءالثالث: الأدوية مرتبة أبجدياً بحسب الشركات المنتجة لتسهيل عمل طلبيات الأدوية.

الجزء الرابع: مرجع لأشهر الأمراض وعلاجها باللغة العربية.

The Disease Encyclopedia Includes:

1. Simple dialog to know everything about the diseases
2. Diseases discussed in details (Definition, Symptoms, causes, diagnosis, laboratory tests, treatment & prevention if possible).
3. The treatment includes Drugs available at the Egyptian market.
4. Chapter for toxicity with chemical agents & drugs, also how to deal & treat this toxicity.
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ISBN 97701705033

Deposit no.: 10061/2007

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